

Subject Index

Absorbers

- Vibration Control of Beams by Beam-Type Dynamic Vibration Absorbers, 169

Absorption

- Factors Controlling Properties and Durability of Concretionary Laterite Gravel Aggregates, 676

Abutments

- Local Scour at Bridge Abutments, 504

Acceleration

- Predicting Vertical Acceleration in Vehicles Through Road Roughness, 970

Accelerometers

- Seismic Response of Pacific Park Plaza. I: Data and Preliminary Analysis, 845

Accessibility

- Accessibility of Public Services in Irbid, Jordan, 1024
- Method for Preevaluation and Selection of Road Projects in Gabon, 978

Accident data

- Aspects of Road-Accident Death Analyses, 986

Accident factors

- Identification of Inappropriate Driving Behaviors, 985

Accident prediction

- Estimating Truck's Critical Cornering Speed and Factor of Safety, 976

- Procedures for Estimating Accident Reductions on Two-Lane Highways, 975

Accident prevention

- Identification of Inappropriate Driving Behaviors, 985

- Procedures for Estimating Accident Reductions on Two-Lane Highways, 975

- Role of Designers in Construction Worker Safety, 130

Accidents

- Aspects of Road-Accident Death Analyses, 986
- Estimating Truck's Critical Cornering Speed and Factor of Safety, 976

- Expert System for Construction Safety. I: Fault-Tree Models, 722

Accreditation

- Military Leaders and Civil Engineers—An Air Force Academy Challenge, 742
- Upgrading the First Professional Degree, 750

Accuracy

- Simplified Building Analysis with Sequential Dead Loads—CFM, 809

Acid rain

- Evaluation Method for Advanced Acid Rain Compliance Technology, 142

- Integrated Assessment of Acid-Deposition Effects on Lake Acidification, 313

Acoustic waves

- Influence of Seafloor on Acoustic Plane Wave, 273

Activated carbon

- Finite Element Modeling of Single-Solute Activated-Carbon Adsorption, 320

Activated carbon treatment

- Modeling of Toxic Wastewater Treatment by Expanded-Bed Anaerobic GAC Reactors, 337

Activated sludge

- Improvement of Flow in Final Settling Tanks, 325
- Modeling and Pilot-Scale Experimental Verification for Predenitrification Process, 308
- Operational Strategies for Predenitrification Process, 309

Activated sludge process

- Gas Phase Control for Oxygen-Activated Sludge, 330

Active control

- Aseismic Hybrid Control of Nonlinear and Hysteretic Structures I, 237

- Aseismic Hybrid Control of Nonlinear and Hysteretic Structures II, 238

- Development of Design Spectra for Actively Controlled Wall-Frame Buildings, 224

- Frequency Domain Optimal Control of Wind-Excited Buildings, 303

- Time-Delay Effect on Dynamic Response of Actively Controlled Structures, 46

Adaptive systems

- Adaptive Control of Ground-Water Hydraulics, 1036

- Adaptive Parameter Estimation for Multisite Hydrologic Forecasting, 539

Adhesive bonding

- Design Considerations for Using Adhesives in Shear Walls, 956

- Effects of Bonding Stiffness on Thermal Stresses in Sandwich Panels, 48

- In-Place Shear Testing of Tile, 691

- Investigation of Zebra Mussel Adhesion Strength Using a Rotating Disk, 349

- Road Aggregate Choice Based on Silicate Quality and Bitumen Adhesion, 971

- Torsional Stresses in Tubular Lap Joints with Tapered Adherends, 272

Adjustment

- Correction Criteria of Finite Element Modeling in Structural Dynamics, 194

Admixtures

- Adding Up Admixtures, 1158

- Mix Design for Flowable Fly-Ash Backfill Material, 690

- Put to the Test, 1231

- Strength and Corrosion Resistance of Superplasticized Concretes, 680

Adsorption

- Finite Element Modeling of Single-Solute Activated-Carbon Adsorption, 320

Modeling of Toxic Wastewater Treatment by Expanded-Bed Anaerobic GAC Reactors, 337
Road Aggregate Choice Based on Silicate Quality and Bitumen Adhesion, 971

Wave Front Behavior in Adsorption Reactors, 339

Aeration

Fundamentals and Application of Windrow Composting, 11
Gas Phase Control for Oxygen-Activated Sludge, 330
Waterfall Aeration Works, 1209

Aeration tanks

Numerical and Physical Modeling of Air Diffuser Plume, 321

Aerial photography

GPS/Positioned Digital Video for Airborne GIS Data Acquisition, 963

Aerodynamics

Analytical Aerodynamic Investigation of Cable-Stayed Helgeland Bridge, 765
Effect of Thickness Distribution on Performance of S-Cambered Profiles, 150
Probabilistic Description of Buffeting Response of Long-Span Bridges, 300
Probabilistic Description of Buffeting Response of Long-Span Bridges: II, 301
Transverse Shear Effect on Flutter of Composite Panels, 47

Affirmative action

Providing Lead Role in Work-Force Diversity, 728

Aggradation

Aggradation-Degradation Process in Alluvial Channels, 567

Aggregates

Creep Recovery of Prepacked Aggregate Concrete, 695
Factors Controlling Properties and Durability of Concretionary Laterite Gravel Aggregates, 676
Fracture Analysis of Mortar-Aggregate Interfaces in Concrete, 276
MSW Incinerator Ash as Aggregate in Concrete and Masonry, 698
Overlays on Deck, 1195
Road Aggregate Choice Based on Silicate Quality and Bitumen Adhesion, 971

Aging

Comprehensive Regional Socioeconomic Simulation System, 1030
Time-Dependent Cone Penetration Resistance Due to Blasting, 429

Agricultural watersheds

Estimating Peak Flows from Small Agricultural Watersheds, 580

Air classifiers

Controlling Pulsed Incompressible Flow, 140

Air entrainment

Durability of MSW Fly-Ash Concrete, 699
Protected-Paste Volume of Air-Entrained Cement Paste. Part 1, 684

Air flow

Defects in Aluminum Windows and Impact on Dust and Air Infiltration, 705

Air Force

Military Leaders and Civil Engineers—An Air Force Academy Challenge, 742

Air pollution

California's Tradable Emissions Policy and Greenhouse Gas Control, 143
Integrated Assessment of Acid-Deposition Effects on Lake Acidification, 313
Transportation Planning and Air Quality, 1273
VOCs: The New Effluent, 1138

Air pollution control

Evaluation Method for Advanced Acid Rain Compliance Technology, 142
VOCs: The New Effluent, 1138

Air quality

California's Tradable Emissions Policy and Greenhouse Gas Control, 143
Environmental Engineering: Saving a Threatened Resource—In Search of Solutions, 1246
Transportation Planning and Air Quality, 1273

Air stripping

Dual-System Cleanup, 1189
Removal of 1,2 Dibromo-3-Chloropropane by Counter-current Cascade Air Stripping, 319

Air temperature

Estimation of Daytime Net Radiation Over Well-Watered Grass, 604

Air transportation

International Air Transportation: A New International Airport, 1256
Model for Air Travel Demand, 991

Air water interactions

Influence of Liquid Length Variation in Hydraulic Transients, 566

Aircraft technology

Transverse Shear Effect on Flutter of Composite Panels, 47

Airfields

Airfield Pavement Creep Failure Investigation, 719
Dynamic Analysis of Rigid Airport Pavements with Discontinuities, 989
Integrated Pavement Management System for Kennedy International Airport, 1011
Settling Down Easy, 1235

Airport construction

Hong Kong Port Facilities, Airport, and Housing Require New Concepts, 755
International Air Transportation: A New International Airport, 1256

Airport design

International Air Transportation: A New International Airport, 1256
Optimum Geometries for Pier-Type Airport Terminals, 979
Settling Down Easy, 1235

SUBJECT INDEX

Airport terminals

Optimum Geometries for Pier-Type Airport Terminals, 979

Tensile Terminal, 1215

Airports

International Air Transportation: A New International Airport, 1256

Many Engineering Issues and Challenges Met in Development of Hong Kong, 731

Road and Airport Pavement Response Monitoring Systems, 1267

Algorithms

Automated Operation of Pumping Stations in Russia, 610

Building KBES for Diagnosing PC Pile With Inductive Learning, 71

Discrete Optimization of Structures Using Genetic Algorithms, 827

Hydrodynamic Furrow Irrigation Model with Specified Space Steps, 603

Interaction of Steep Waves with Vertical Walls, 1107

Modal Identification Algorithm with Unmeasured Input, 45

Open-Channel Flow Algorithm in Newton-Raphson Form, 594

Scheduling Demand-Responsive Transportation Vehicles Using Fuzzy-Set Theory, 993

Shortest Path Within Polygon and Best Path Around or through Barriers, 1029

Solid Modeling of RC Beams: 1. Data Structures and Algorithms, 81

Alkalinity

Rebar Corrosion in $MgSO_4$ Solution, 693

Alluvial channels

Aggradation-Degradation Process in Alluvial Channels, 567

Alluvial Canals Adequacy, 609

Development of Bed Features, 5

Note on Lag in Bedload Discharge, 520

Prediction of Natural Channel Hydraulic Roughness, 615

Alluvial fans

Design of Flood Protection for Transportation Alignments on Alluvial Fans, 595

Preferred Directions of Flow on Alluvial Fans, 526

Alluvial streams

Bed-Load Coefficients, 555

Development of Bed Features, 5

Incipient Motion during Static Armoring, 498

Alluvium

Flexural Strength of Sand-Reinforced Ice, 3

Mean Size Distribution of Bed Load on Goodwin Creek, 556

Aluminum

Bending of Thin Plate with Three-Point Support, 838

The Crown and the Curtain Wall, 1194

Defects in Aluminum Windows and Impact on Dust and Air Infiltration, 705

Projectile Shape and Material Effects in Hypervelocity Impact Response of Dual-Wall Structures, 43

Analytical techniques

Ammonia

Thermodynamic Model of Nitrification Kinetics, 341

Amplification

Inelastic Amplification Factor for Design of Steel Beam-Columns, 859

Amplitude

Fatigue Life of Offshore Steel Structures Under Stochastic Loading, 874

Anaerobic digestion

Conditioning and Dewatering of Anaerobically Digested BPR Sludge, 345

Expert System for Anaerobic-Digestion-Process Operation, 364

pH Control in Anaerobic Treatment of Industrial Wastewater, 340

U.S. Sludge Digesters: From Pancakes to Eggs, 1205

Analysis

Analysis and Implementation of Thin-Layer Element for Interfaces and Joints, 302

Analytical Aerodynamic Investigation of Cable-Stayed Helgeland Bridge, 765

Analytical Solution of Steady Seepage into Double-Walled Cofferdams, 185

Boundary-Continuous Fourier Solution for Clamped Mindlin Plates, 239

Coupled Vertical and Horizontal Galloping, 159

Crack Analysis of Reinforced Concrete Tension Members, 875

Drying and Cracking Effects in Box-Girder Bridge Segment, 773

Dynamic Compaction Analysis, 425

Effect of Static Offset on TLP Modeling, 158

Evaluation of System-Reliability Methods for Cable-Stayed Bridge Design, 820

Generalized Slope Stability Analysis: Interpretation, Modification, and Comparison, 451

Inelastic Limit States Design. Part I: Planar Frame Studies, 898

Inelastic Limit States Design. Part II: Three-Dimensional Frame Study, 899

Lagrangian Solution of St. Venant's Equations for Alluvial Estuary, 536

Mechanism of Biological Treatment in Plug-Flow or Batch Systems, 344

Ship-Berth Link as Bulk Queueing System in Ports, 1108

Slab Behavior in Composite Beams at Openings. I: Analysis, 884

State-Space Analysis and Control of Slow Transients in Pipes, 544

Stiffened Sheathings of Orthotropic Cylindrical Shells, 808

Tide and Storm Surge Predictions Using Finite Element Model, 551

Time Domain Analysis of Dynamically Loaded Single Piles, 162

Ultimate Loads of Continuous Composite Bridges, 902

Analytical techniques

Analytical Moment-Curvature Relations for Tied Concrete Columns, 785

Anchor bolts

Ductile Multiple-Anchor Steel-to-Concrete Connections, 850

Anchorage

Advancing Anchorage Technology, 1181

Bond Anchorage of Pretensioned FRP Tendon at Force Release, 915

Conflict of Interest in Deep-Draft Anchorage Usage—Application of QT, 1082

Guidelines for Design of Cable-Stayed Bridges, 1251

Hysteretic Behavior of Anchorage Slip in R/C Members, 893

Reinforcement Anchorage Slip under Monotonic Loading, 892

Anchors

Balanced Seismic Design of Anchored Retaining Walls, 410

Effects of K_0 and Overconsolidation on Uplift Capacity, 446

Pullout Stiffness of Elastic Anchors in Slope Stabilization Systems, 412

Regolith Mechanics, Dynamics, and Foundations, 30

Seismic Response of Multianchored Retaining Walls, 463

Anemometers

Kinematics of 2-D Transient Water Waves Using Laser Doppler Anemometry, 1087

Measured Internal Kinematics for Shoaling Waves with Theoretical Comparisons, 1098

Velocity Profiles in Steep Open-Channel Flows, 480

Angle section

Stitch Spacing and End Fixity in Seismic-Resistant Boxed Angle Braces, 917

Anion exchange

Removing Selenium(IV) and Arsenic(V) Oxyanions with Tailored Chelating Polymers, 352

Anisotropic materials

Antiplane Problems of Monoclinic Material, 259

Anisotropic plates

Three-Dimensional Solutions for Thermal Buckling of Multilayered Anisotropic Plates, 195

Anisotropic shells

Family of Iterative Shear-Deformation Theories for Shallow Shells, 286

Anisotropic soils

Elastic-Plastic Analysis of Footings on Anisotropic Soils, 388

Modeling Anisotropy of Clays at Critical State, 201

Anisotropy

Analysis of Recharge in Anisotropic, Layered, Saturated-Unsaturated Soil, 612

Anisotropic Plasticity Model for Undrained Cyclic Behavior of Clays. I: Theory, 379

Anisotropic Plasticity Model for Undrained Cyclic Behavior of Clays. II: Verification, 380

Constitutive Behavior of Stress-Induced Anisotropic Cohesive Soil, 440

Numerical Study of Soil Anisotropy, 167

Postbuckling Response Simulations of Laminated Anisotropic Panels, 40

Response of Cross-Anisotropic Seabed to Ocean Waves, 437

Approximation

AASHTO Direct Structural Capacity Method Error Analysis, 969

Approximation methods

Approximating Lateral Stiffness of Stories in Elastic Frames, 770

Point-Estimate Method for Calculating Statistical Moments, 242

Aquatic habitats

Sediment and Aquatic Habitat in River Systems, 505

Aquatic plants

Field-Measured Hydraulic Resistance Characteristics in Vegetation-Infested Canals, 590

Aqueducts

Design of Flood Protection for Transportation Alignments on Alluvial Fans, 595

Aquifers

Drawdowns for Nonleaky Aquifer Flow with Storage in Finite-Width Sink, 617

Migration of Chloroform in Aquifers, 315

Quasi-Three-Dimensional Optimization Model of Jakarta Basin, 1037

Simulating Solute Transport Using Laboratory-Based Sorption Parameters, 347

Aramid

Bond Anchorage of Pretensioned FRP Tendon at Force Release, 915

Properties of Aramid-Fiber Reinforced Concrete and SIFCON, 672

Arbitration

Resolving Construction Disputes by Mediation: Hong Kong Experience, 671

Arches

Designing Reinforced Rock, 1125

Low-Order Interpolation Functions for Curved Beams, 174

Stability of Masonry Piers and Arches, 176

Architecture

Technical Issues for Lunar Base Structures, 27

Arid lands

New Look at Regional Flood-Frequency Relations for Arid Lands, 518

Preferred Directions of Flow on Alluvial Fans, 526

Armor units

Armor Stability on Submerged Breakwaters, 1092

Statistical Analysis of Formulas for Breakwater Armor Layer Design, 1093

Arsenic

Removing Selenium(IV) and Arsenic(V) Oxyanions with Tailored Chelating Polymers, 352

Artesian aquifers

Drawdowns for Nonleaky Aquifer Flow with Storage in Finite-Width Sink, 617

Artificial intelligence

Computing in Civil Engineering and Geographic Information Systems Symposium, 1239

SUBJECT INDEX

Axial loads

- Neuroform—Neural Network System for Vertical Formwork Selection, 70
- Path-Finder: AI-Based Path Planning System, 66
- SightPlan Model for Site Layout, 135
- Site-Layout Modeling: How Can Artificial Intelligence Help?, 125
- Artificial islands**
- Fly-Ash Slurry Island: I. Theoretical and Experimental Investigations, 681
- Fly-Ash Slurry Island: II. Construction in Hakucho Ohashi Project, 682
- Artificial recharge**
- Analysis of Recharge in Anisotropic, Layered, Saturated-Unsaturated Soil, 612
- ASCE Activities**
- ASCE Should Have a Construction Safety Committee, 730
- ASCE Awards & Prizes**
- Analysis and Design Models for Structural Concrete Bridge Deck Overlays, 8
- Consequential Equipment Costs Associated with Lack of Availability and Downtime, 13
- Development of Bed Features, 5
- Evapotranspiration and Irrigation Water Requirements, 2
- Flexural Strength of Sand-Reinforced Ice, 3
- Fundamentals and Application of Windrow Composting, 11
- Future Trends and Needs in Hydraulics, 564
- Horizontal Load Transfer in Structural Concrete Bridge Deck Overlays, 9
- Loss of PCBs from Municipal-Sludge-Treated Farmland, 10
- Model of Fate and Accumulation of PCB Homologues in Hudson Estuary, 14
- Pavement Performance and Life-Cycle Cost Analysis, 1
- Postdensification Penetration Resistance of Clean Sands, 12
- Seismic Performance of Low-Rise Steel Perimeter Frames, 7
- Slender Reinforced Concrete Bridge Towers under Cyclic Lateral Load, 6
- Wood Connections with Heavy Bolts and Steel Plates, 4
- ASCE Outstanding Civil Engineering**
- OCEA, American-Style, 1180
- The OCEA Awards of Merit, 1178
- Seattle Swings Again, 1177
- ASCE Publications**
- ASCE Annual Combined Index—1991, 1236
- Transactions of the American Society of Civil Engineers—1991, 1272
- Ashes**
- MSW Incinerator Ash as Aggregate in Concrete and Masonry, 698
- Asphalt mix design**
- A European Road Comes to the U.S., 1159
- Road Aggregate Choice Based on Silicate Quality and Bitumen Adhesion, 971
- Variations in Measured Resilient Modulus of Asphalt Mixes, 697
- Astrogeology**
- Behavior of Compacted Lunar Simulants Using New Vacuum Triaxial Device, 44
- Astronomy**
- Structural Design of Lunar Radio Telescope Using Interactive CAD, 16
- Australia**
- Wind Loads on Buildings with Sawtooth Roofs, 780
- Automation**
- Advanced Technology Applications in Chicago-Area Freeway Traffic Management Program, 997
- Automated Construction Field-Data Management System, 1001
- Automating The Corps, 1156
- Automation of Concrete Slab-on-Grade Construction, 134
- Computer-Controlled Brick Masonry, 68
- Design of Control Algorithm for Operation of Irrigation Canals, 632
- Engineering, Construction, and Operations in Space III, 1244
- Histogram-Based Approach for Automated Pavement-Crack Sensing, 1013
- Laptop Automated Navigation Aid Positioning System with Differential GPS, 967
- The Last Freeway, 1162
- Testing Photoelectric Sensor System to Classify Vehicles, 998
- Urban Transit Guides Application of Advanced Train Control, 977
- Wave-Motion Stability in Canals with Automatic Controllers, 565
- Automobiles**
- Testing Photoelectric Sensor System to Classify Vehicles, 998
- Auto-regressive moving-average model**
- Modal and Wave Load Identification by ARMA Calibration, 228
- Recursive Parameter Estimation for ARMA Simulations, 304
- Awards**
- OCEA, American-Style, 1180
- The OCEA Awards of Merit, 1178
- Seattle Swings Again, 1177
- Axial compression**
- Behavior of Concrete Hollow-Block Masonry Prisms under Axial Compression, 855
- Buckling of Pressurized Axisymmetrically Imperfect Cylinders Under Axial Loads, 168
- Axial loads**
- Axial and Free-Bending Analysis of Spiral Strands Made Simple, 296
- Design Aids for Reinforced Concrete Columns, 924
- Design of RC Sections with Generic Shape under Biaxial Bending, 822
- Simple Cord Composites, 270
- Stiffness Expressions for Element with Central and End Springs, 810

Thermomechanical Buckling of Multilayered Composite Plates, 175

Axisymmetry

Axisymmetric General Shells and Jointed Shells of Revolution, 937

Evaluation of Plastic Bifurcation for Plane Strain versus Axisymmetry, 184

Exact Formulation of Axisymmetric-Interface-Element Stiffness Matrix, 435

Pressure of Crushed Ice as Mohr-Coulomb Material Against Flat, Axisymmetric Indentor, 58

Time Domain Analysis of Dynamically Loaded Single Piles, 162

Backfills

Backfill-Stiffened Foundation Wall Design, 465

Damage of Entryway Stairs due to Settlement of Gravel Backfill, 714

Evaluation of Flowable Fly-Ash Backfill. I: Static Loading, 389

Evaluation of Flowable Fly-Ash Backfill. II: Dynamic Loading, 390

Mix Design for Flowable Fly-Ash Backfill Material, 690

Pullout Tests Using Steel Grid Reinforcements with Low-Quality Backfill, 421

Retaining Wall With Reinforced Cohesionless Backfill, 467

Backwashing

Calculating Flow in Manifold and Orifice System, 342

Velocity Gradient in Filter Backwashing, 353

Bacteria

Evaluation of Ozone Disinfection Systems: Characteristic Time T , 322

Evaluation of Ozone Disinfection Systems: Characteristic Concentration C , 336

Microbiologically Induced Corrosion, 1161

Microorganism Survival in Ice-Covered Marine Environment, 53

QSAR Parameters for Toxicity of Organic Chemicals to *Nitrobacter*, 307

Bank stabilization

Hydraulic Geometry of Threshold Channels, 503

Predicting Influence of Bank Vegetation on Channel Capacity, 530

Bankruptcy

Design Engineer/Contractor Bankruptcy: Considerations for Debtor and Creditors, 663

Financial Performance Analysis for Construction Industry, 111

Barges

Positive Drift of a Backward-Bent Duct Barge, 1084

Barriers

Noise Barrier Simulated by Rigid Screen with Back Wall, 156

Bars

Considerations in Using Bragg Reflection for Storm Erosion Protection, 1081

Corrosion Cracking in Relation to Bar Diameter, Cover, and Concrete Quality, 696

Necking of Creep-Cavitating Bars, 199

Basalt

Indigenous Resource Utilization in Design of Advanced Lunar Facility, 31

Base isolation

AASHTO Seismic Isolation Design Requirements for Highway Bridges, 772

Aseismic Hybrid Control of Nonlinear and Hysteretic Structures I, 237

Aseismic Hybrid Control of Nonlinear and Hysteretic Structures II, 238

Dynamic Interface Shear Strength Properties of Geomembranes and Geotextiles, 405

Experimental Study of Secondary Systems in Base-Isolated Structure, 880

Experimental Study of Sliding Isolated Structures with Uplift Restraint, 851

Interactive Base-Isolation Foundation System: I. Finite Element Formulation, 277

Interactive Base-Isolation Foundation System: II. Parametric Study, 278

Seismic Performance of Fixed-Base and Base-Isolated Steel Frames, 208

Wind Effects on Base-Isolated Structures, 255

Base plates

Ductile Multiple-Anchored Steel-to-Concrete Connections, 850

Basins

Feedback Control of Basin-Irrigation System, 605

Batch processing

Mechanism of Biological Treatment in Plug-Flow or Batch Systems, 344

Bayesian analysis

Bayesian Inference for Feedback Control. I: Theory, 600

Bayesian Inference for Feedback Control. II: Surface Irrigation Example, 601

Bays

Effects of Sea-Level Rise on Bays and Estuaries, 476

Beach erosion

Considerations in Using Bragg Reflection for Storm Erosion Protection, 1081

Beach nourishment

Beach-Nourishment Performance Predictions, 1113

Estimating Extreme Values of Run-Up on Beaches, 1094

Tackling Trapped Sediments, 1134

Beaches

Estimating Extreme Values of Run-Up on Beaches, 1094

Irregular Wave Setup and Run-up on Beaches, 1102

Measured Internal Kinematics for Shoaling Waves with Theoretical Comparisons, 1098

Prediction of Storm/Normal Beach Profiles, 1090

Shoaling and Decay of Two Wave Trains on Beach, 1110

Shoreline Profile of Stokes-Mode Edge Waves, 1085

Beam columns

Cyclic Behavior of Extended End-Plate Joints, 833

Force Deformation Equations for Initially Curved Laterally Loaded Beam Columns, 229

SUBJECT INDEX

Inelastic Amplification Factor for Design of Steel Beam-Columns, 859
Modeling Slab Contribution in Frame Connections, 895
Prebuckling Deflections and Lateral Buckling. I: Theory, 922
Prebuckling Deflections and Lateral Buckling. II: Applications, 923
Seismic Behavior and Shear Strength of Framed Joint Using Steel-Fiber Reinforced Concrete, 775
Stiffness Expressions for Element with Central and End Springs, 810

Beams
Analysis of Buildings Using Strain-Based Element with Rotational DOFs, 825
ASCE LRFD Method for Stainless Steel Structures, 817
Backfill-Stiffened Foundation Wall Design, 465
Beam-Column Behavior of Fabricated Steel Tubular Members, 826
Bending of Rectangular Cross-Section Cantilever with Cylindrical Cutouts, 203
Computer Graphics in Detailing Strut-Tie Models, 72
Deflections of Beams with Varying Rectangular Cross Section, 282
Deformational Behavior of Fiber-Reinforced Concrete Beams in Bending, 906
Design of Notched Wood Beams, 891
Energy Equation for Beam Lateral Buckling, 840
Estimating Uplift Capacity of Light Steel Roof System, 804
Flexural Analysis of Reinforced Concrete Beams Containing Steel Fibers, 914
Fracture Mechanics and Size Effect of Concrete in Tension, 936
Frame Buckling Analysis with Full Consideration of Joint Compatibilities, 205
High-Order Theory for Sandwich-Beam Behavior with Transversely Flexible Core, 214
Model for Optimal Design of Reinforced Concrete Beam, 940
Modeling Horizontally Nail-Laminated Beams, 836
Prestressed Composite Girders. I: Experimental Study for Negative Moment, 910
Prestressed Composite Girders. II: Analytical Study for Negative Moment, 911
Quantitative NDE Technique for Assessing Damages in Beam Structures, 240
Sensitivity Analysis of Thin-Walled I-Beams Resting on Elastic Foundation, 226
Service Load Behavior of Concrete Members Prestressed with Unbonded Tendons, 900
Shear-Stress Distribution in Symmetrically Tapered Cantilever Beam, 941
Solid Modeling of RC Beams: 1. Data Structures and Algorithms, 81
Solid Modeling of RC Beams: 2. Computational Environment, 82
Theoretical Study of Crack-Induced Eigenfrequency Changes on Beam Structures, 177
Timoshenko Beam Element Resting on Two-Parameter Elastic Foundation, 171
Vibration Control of Beams by Beam-Type Dynamic Vibration Absorbers, 169

Bed load movement

Vibration Control of Beams with Embedded Smart Composite Material, 49

Beams, structural
Dynamic Response of Beams on Elastic Foundation, 805

Beams, supports
Commentary on Proposed Specification for Structural Steel Beams with Web Openings (with Design Example), 947
Prevention of Stress Relaxation in Viscoelastic Structures, 860
Proposed Specification for Structural Steel Beams with Web Openings, 946

Bearing capacity
Analysis for Soil Reinforcement with Bending Stiffness, 448
Bearing Capacity on Nonhomogeneous Cohesive Soils under Embankments, 424
Efficiency Formula for Pile Groups, 382
Elastic-Plastic Analysis of Footings on Anisotropic Soils, 388
Large-Scale Loading Tests of Shallow Footings in Pneumatic Caisson, 457
Optimal Design of Structures with Kinematic Nonlinear Behavior, 196
Reinforced Sand Behavior Overlying Compressible Subgrades, 456
Residual Deformation Analysis for Inelastic Bridge Rating, 842
Soil Plug Response in Open-Ended Pipe Piles, 404
Square and Rectangular Hollow Sections Subject to Combined Actions, 792
Stability Analysis in Geomechanics by Linear Programming. I: Formulation, 458
Stability Analysis in Geomechanics by Linear Programming. II: Application, 459
Tomorrow's Schools, 1123
Ultimate Load Test of Slab-on-Girder Bridge, 848

Bearing design
Ductility and Detailing Requirements of Bearing Wall Buildings, 849

Bearings
Experimental Study of Sliding Isolated Structures with Uplift Restraint, 851
Temperature Dependent Bridge Movements, 819

Bed load
Bed-Load Coefficients, 555
Cohesionless Fine-Sediment Bed Forms in Shallow Flows, 510
Mean Size Distribution of Bed Load on Goodwin Creek, 556
Motion of Contact-Load Particles at High Shear Stress, 568
Note on Lag in Bedload Discharge, 520
Prediction Method for Local Scour by Warmed Cooling-Water Jets, 537

Bed load movement
Bed-Load Coefficients, 555
Bed-Load Transport on Transverse Slope. I, 499
Conceptual Bed-Load Transport Model and Verification for Sediment Mixtures, 535
Mechanics of Saltating Grains. II, 500

Bed load movement

New Total Sediment-Load Sampler, 569

Bed material

Properties of Various Sediment Sampling Procedures, 523

Routing of Heterogeneous Sediments over Movable Bed: Model Development, 483

Routing of Heterogeneous Sediments over Movable Bed: Model Verification, 484

Sediment and Aquatic Habitat in River Systems, 505

Bed movements

Motion of Contact-Load Particles at High Shear Stress, 568

Bed ripples

Development of Bed Features, 5

Flow Field Induced by Sea Waves Over Brick-Pattern Ripples, 541

Bedforms

Flow Field Induced by Sea Waves Over Brick-Pattern Ripples, 541

Hyperconcentrated Sand-Water Mixture Flows over Erodible Bed, 559

Beds

Development of Bed Features, 5

Effects of Porous Bed on Turbulent Stream Flow above Bed, 540

Velocity Gradient in Filter Backwashing, 353

Bending

Analysis of Thick Circular Plates Undergoing Large Deflections, 25

Axial and Free-Bending Analysis of Spiral Strands Made Simple, 296

Axisymmetric General Shells and Jointed Shells of Revolution, 937

Complete Biaxial Load-Deformation Behavior of RC Columns, 901

Creep Behavior Model for Structural Lumber, 883

Free-Bending Fatigue Life Estimation of Cables at Points of Fixity, 258

High-Order Theory for Sandwich-Beam Behavior with Transversely Flexible Core, 214

Load-Duration Effects in Structural Lumber: Strain Energy Approach, 888

Transition Plate-Bending Elements for Compatible Mesh Gradation, 181

Bending moments

Bending of Rectangular Cross-Section Cantilever with Cylindrical Cutouts, 203

Moving Hinge in Large-Displacement Problems, 263

Response of Plates of Arbitrary Shape Subject to Static Loading, 260

Benefit cost analysis

Benefit-Cost Ratios: Failures and Alternatives, 1042

Method for Preevaluation and Selection of Road Projects in Gabon, 978

Pavement Performance and Life-Cycle Cost Analysis, 1

Probability Distribution for Benefit/Cost Ratio and Net Benefit, 1044

Benefit cost ratios

Benefit-Cost Ratios: Failures and Alternatives, 1042

1992 ASCE TRANSACTIONS

Probability Distribution for Benefit/Cost Ratio and Net Benefit, 1044

Benefits

Civil Engineering Experience and Education, 732

Bentonite

Hydraulic Conductivity of Three Geosynthetic Clay Liners, 453

Interaction of Inorganic Leachate with Compacted Pozzolan Fly Ash, 444

Berths

Ship-Berth Link as Bulk Queueing System in Ports, 1108

Biaxial bending

Design Aids for Reinforced Concrete Columns, 924

Design of RC Sections with Generic Shape under Biaxial Bending, 822

Out-of-Plane Strengths of Steel Beams, 868

Biaxial loads

Complete Biaxial Load-Deformation Behavior of RC Columns, 901

Biaxial stress

Stress-Strain Curves for Brick Masonry in Biaxial Compression, 839

Bibliographies

ASCE Annual Combined Index—1991, 1236

Transactions of the American Society of Civil Engineers—1991, 1272

Bids

Bidding Strategy: Winning over Key Competitors, 99

Critical Success Factors in Winning BOT Contracts, 102

Multiparameter Bidding System—Innovation in Contract Administration, 98

Overhead and Profit on Change Orders, 1193

Selection of Design/Build Proposal Using Fuzzy-Logic System, 108

Bifurcations

Branch Switching in Bifurcation of Structures, 247

Dynamic Behavior of Nonlinear Cable System. II, 207

Evaluation of Plastic Bifurcation for Plane Strain versus Axisymmetry, 184

Nonlinear Stability of Differential Surge Chambers, 560

Binders, materials

Overlays on Deck, 1195

Bins

Design Implications of Measured Pressures and Strains in Silos, 909

Bioassay

QSAR Parameters for Toxicity of Organic Chemicals to *Nitrobacter*, 307

Water, Endangered Ecosystem: Assessment of Chemical Pollution, 335

Biochemical oxygen demand

BOD Test for Tropical Countries, 324

Biodegradation

Modeling of Toxic Wastewater Treatment by Expanded-Bed Anaerobic GAC Reactors, 337

SUBJECT INDEX

Bracing

Biological treatment

- Activity of Biomass in RBC System Treating Pulp Industrial Wastewater, 351
- Conditioning and Dewatering of Anaerobically Digested BPR Sludge, 345
- Mechanism of Biological Treatment in Plug-Flow or Batch Systems, 344
- Metallurgical Residue for Solubilization of Metals from Sewage Sludge, 355
- Model for Biological Reactors Having Suspended and Attached Growths, 366

Biomass

- Activity of Biomass in RBC System Treating Pulp Industrial Wastewater, 351
- Effect of Nitrogen on Yield Using Bioenergetics Theory, 356
- Model for Biological Reactors Having Suspended and Attached Growths, 366

Biomechanics

- Investigation of Zebra Mussel Adhesion Strength Using a Rotating Disk, 349

Birefringence

- Novel Photoelastic Approach in Analysis of Elliptical Holes in Thick Plates, 250

Bitumen

- Road Aggregate Choice Based on Silicate Quality and Bitumen Adhesion, 971

Blast loads

- Dynamic Response Analysis of Reinforced-Soil Retaining Wall, 426

Blasting

- Postdensification Penetration Resistance of Clean Sands, 12
- Time-Dependent Cone Penetration Resistance Due to Blasting, 429
- Use of Explosives on the Moon, 19

Blocks

- Behavior of Concrete Hollow-Block Masonry Prisms under Axial Compression, 855

Bolts

- Prying and Shear in End-Plate Connection Design, 831
- Wood Connections with Heavy Bolts and Steel Plates, 4

Bond stress

- Bond Anchorage of Pretensioned FRP Tendon at Force Release, 915
- Crack Analysis of Reinforced Concrete Tension Members, 875
- Cracking Response of RC Members Subjected to Uniaxial Tension, 824
- Reinforcement Anchorage Slip under Monotonic Loading, 892

Bonding

- FRP-Reinforced Wood as Structural Material, 694

Bonding strength

- In-Place Shear Testing of Tile, 691

Bonds, contracts

- Underwriting Process for Construction Contract Bonds, 649

Border irrigation

- Interpretation of Kostikov Infiltration Parameters for Borders, 582

Boreholes

- Construction Applications of Relational Data Bases in Three-Dimensional GIS, 64
- Dynamics of Saturated Rocks. IV: Column and Borehole Problems, 261

Boston

- Boston's City within a City, 1206
- The Heartbeat of the Artery, 1120

Boundaries

- Ductility and Detailing Requirements of Bearing Wall Buildings, 849

Boundary conditions

- Effects of Dead Loads in Dynamic Plates, 759
- Exact Solution for General Torsion Problems Using Boundary Singularities, 284

Boundary element method

- Boundary-Element Direct Reanalysis for Continuum Structures, 253
- Frictionless Contact with BEM Using Quadratic Programming, 266
- Rocking Impedance of Embedded Strip Foundations in Layered Soil, 407
- Time Domain Analysis of Dynamically Loaded Single Piles, 162
- Time-Domain Second-Order Wave Diffraction in Three Dimensions, 1109
- Torsional Radiation Damping of Arbitrarily Shaped Embedded Foundations, 428
- Torsional Stiffness of Arbitrarily Shaped Embedded Foundations, 427

Boundary layer

- Computation of Turbulent Shear Flow Over Surface-Mounted Obstacle, 293
- Flow Field Induced by Sea Waves Over Brick-Pattern Ripples, 541
- Velocity Distribution in Uniform Sediment-Laden Flow, 482

Boundary shear

- Cohesionless Fine-Sediment Bed Forms in Shallow Flows, 510

Boundary value problems

- Boundary-Continuous Fourier Solution for Clamped Mindlin Plates, 239

Bounding surface

- Numerical Study of Soil Anisotropy, 167

Box columns

- Strength and Efficiency of Wood Box Columns, 796

Box girders

- Instrumenting the 'Y', 1217

Bracing

- Bracing Requirements of Plane Frames, 844
- Stitch Spacing and End Fixity in Seismic-Resistant Boxed Angle Braces, 917
- Technology Transfer in Building Construction—Case of Seismic Design, 97
- Theoretical Study of Stability Criteria for X-Bracing Systems, 233

Breaking waves

Breaking waves

Effects of Bottom Friction on Wave Breaking Using RCPWAVE Model, 1103

Measured Internal Kinematics for Shoaling Waves with Theoretical Comparisons, 1098

Wave Runup on Smooth and Rock Slopes of Coastal Structures, 1111

Breakwaters

Armor Stability on Submerged Breakwaters, 1092

Hydraulic Design of Perforated Breakwaters, 1077

Reflection and Transmission of Water Wave by Porous Breakwater, 1106

Statistical Analysis of Formulas for Breakwater Armor Layer Design, 1093

Brick masonry

Stress-Strain Curves for Brick Masonry in Biaxial Compression, 839

Bricks

Water Penetration in Laterally Loaded Brick-Wall Panels, 703

Bridge construction

Method Proposed for Construction of Multispan Cable-Stayed Bridges, 106

Potential Gains Through Welded-Wire Fabric Reinforcement, 104

Bridge decks

Optimal Long-Term Scheduling of Bridge Deck Replacement and Rehabilitation, 987

Overlays on Deck, 1195

Potential Gains Through Welded-Wire Fabric Reinforcement, 104

Secondary Stresses in Closed Orthotropic Deck Ribs at Floor Beams, 788

Bridge design

AASHTO Seismic Isolation Design Requirements for Highway Bridges, 772

Aesthetic Design Philosophy Utilized for California State Bridges, 1035

Evaluation of Impact Factors for Horizontally Curved Steel Box Bridges, 938

Evaluation of System-Reliability Methods for Cable-Stayed Bridge Design, 820

Guidelines for Design of Cable-Stayed Bridges, 1251

Instrumenting the 'Y', 1217

Slip Behavior of Cable against Saddle in Suspension Bridges, 777

Bridge failure

Assessing Time-Variant Bridge Reliability Due to Pier Scour, 519

Reliability-Based Pier Scour Engineering, 549

Bridge loads

Statistical Evaluation of Truck Overloads, 1010

Bridge maintenance

Modeling Bridge Deterioration with Markov Chains, 1020

Rehabbing the Rails, 1198

Safeguarding Steel, 1151

Bridges

Analysis and Design Models for Structural Concrete Bridge Deck Overlays, 8

1992 ASCE TRANSACTIONS

Assessing Time-Variant Bridge Reliability Due to Pier Scour, 519

Effects of Footing Location on Bridge Pier Scour, 485

Flexibility by Multireference Impact Testing for Bridge Diagnostics, 879

Fly-Ash Slurry Island: I. Theoretical and Experimental Investigations, 681

Fly-Ash Slurry Island: II. Construction in Hakucho Ohashi Project, 682

Horizontal Load Transfer in Structural Concrete Bridge Deck Overlays, 9

Instrumenting the 'Y', 1217

Local Scour at Bridge Abutments, 504

Modeling Bridge Deterioration with Markov Chains, 1020

Out with the Old, 1197

Prestressed Composite Girders. I: Experimental Study for Negative Moment, 910

Prestressed Composite Girders. II: Analytical Study for Negative Moment, 911

Statistical Evaluation of Truck Overloads, 1010

Temperature Dependent Bridge Movements, 819

Bridges, box girder

Aesthetic Design Philosophy Utilized for California State Bridges, 1035

Drying and Cracking Effects in Box-Girder Bridge Segment, 773

Evaluation of Impact Factors for Horizontally Curved Steel Box Bridges, 938

Prestress Influence on Shear-Lag Effect in Continuous Box-Girder Bridge, 932

Seattle Swings Again, 1177

Bridges, cable-stayed

Analytical Aerodynamic Investigation of Cable-Stayed Helgeland Bridge, 765

Cable-Stayed Bridge Vibration Due to Road Surface Roughness, 834

Double Diamonds: New Brand for a Texas Bridge, 1149

Evaluation of System-Reliability Methods for Cable-Stayed Bridge Design, 820

Fatigue Resistance of Large-Diameter Cable for Cable-Stayed Bridges, 795

Guidelines for Design of Cable-Stayed Bridges, 1251

Method Proposed for Construction of Multispan Cable-Stayed Bridges, 106

Slender Reinforced Concrete Bridge Towers under Cyclic Lateral Load, 6

Bridges, composite

Ultimate Loads of Continuous Composite Bridges, 902

Bridges, concrete

Analysis and Design Models for Structural Concrete Bridge Deck Overlays, 8

Building Better Bridges: Concrete Vs. Steel, 1182

Horizontal Load Transfer in Structural Concrete Bridge Deck Overlays, 9

Prestressed-Concrete Railway-Bridge Live-Load Strains, 776

Bridges, continuous

Impact Analysis of Continuous Multigirder Bridges due to Moving Vehicles, 953

SUBJECT INDEX

Buckling

Bridges, girder

- Dynamic Response of Multigirder Bridges, 881
- Free Vibration Analysis of Curved Thin-Walled Girder Bridges, 918
- Impact Analysis of Continuous Multigirder Bridges due to Moving Vehicles, 953
- Residual Deformation Analysis for Inelastic Bridge Rating, 842
- Shakedown Limit State of Compact Steel Girder Bridges, 812
- Ultimate Load Test of Slab-on-Girder Bridge, 848
- Wheel Load Distribution in I-Girder Highway Bridges, 830

Bridges, highway

- AASHTO Seismic Isolation Design Requirements for Highway Bridges, 772
- Wheel Load Distribution in I-Girder Highway Bridges, 830

Bridges, long span

- Finite Element-Based Flutter Analysis of Cable-Suspended Bridges, 843

Bridges, piers

- Bridge Pier Scour with Debris Accumulation, 545
- Design of Bridge Pier Pile Foundations for Ship Impact, 877
- Ice Loads on Vertical Bridge Pier at Two Different Model Scales, 55
- Reliability-Based Pier Scour Engineering, 549
- Scour Protection at Bridge Piers, 542

Bridges, railroad

- Prestressed-Concrete Railway-Bridge Live-Load Strains, 776
- Rehabbing the Rails, 1198

Bridges, spans

- Probabilistic Description of Buffeting Response of Long-Span Bridges, 300
- Probabilistic Description of Buffeting Response of Long-Span Bridges: II, 301

Bridges, steel

- Building Better Bridges: Concrete Vs. Steel, 1182
- Safeguarding Steel, 1151

Bridges, suspension

- Slip Behavior of Cable against Saddle in Suspension Bridges, 777
- Wire Recovery Length in Suspension Bridge Cable, 942

Brittleness

- Compression Failure of Quasibrittle Material: Nonlocal Microplane Model, 186
- Safety and Service Life of Equipment Designed for Cold Climate Operation, 56
- Softening and Snap-Through Behavior of Reinforced Elements, 246

Bubbles

- Destruction of Stratification By Bubble Plume, 501

Buckling

- Axisymmetric Buckling of Pressure-Loaded Spherical Caps, 811
- Beam-Column Behavior of Fabricated Steel Tubular Members, 826

- Buckle Propagation in Submarine Pipelines, 288
- Buckling of Columns of Variable Flexural Rigidity, 192
- Buckling of Pressurized Axisymmetrically Imperfect Cylinders Under Axial Loads, 168
- Buckling of Skew Plates and Corner Condition for Simply Supported Edges, 193
- Buckling of Suspended Cambered Girders, 784
- Classical Buckling Load of Spherical Domes Under Uniform Pressure, 243
- Column Design in Steel Frames under Gravity Loads, 920
- Critical Review of Thin-Plate Stability Equations, 182
- Design/Control Optimization of Cross-Ply Laminates under Buckling and Vibration, 24
- Dimensional Analysis of Buckling of Stiffened Composite Shells, 187
- Distortional Buckling Solutions for Continuous Composite Beams, 761
- Dynamic Elastic-Plastic Buckling Behavior Illustrated by Simple Model, 274
- Effective Strength of 'Square-and-Diagonal' Double-Layer Grid, 760
- Elastic Buckling Coefficients for Long, Unstiffened Plates, 305
- Elastic Buckling of Incomplete Composite Plates, 154
- Elastic Buckling of Rectangular Plates with Curved Internal Supports, 841
- Energy Equation for Beam Lateral Buckling, 840
- Experimental Performance of Long Links in Eccentrically Braced Frames, 929
- Frame Buckling Analysis with Full Consideration of Joint Compatibilities, 205
- Inelastic Amplification Factor for Design of Steel Beam-Columns, 859
- Load Shortening in Plastic Buckling of Cylinders, 267
- Local and Interaction Buckling of Polygonal Section Steel Columns, 904
- Manufactured Wood Joists—Noncollapse Failure, 709
- Mechanics of Shape Optimization in Plate Buckling, 227
- New Stability Equation for Columns in Braced Frames, 861
- Nonlinear Cyclic Behavior of Reinforcing Bars Including Buckling, 943
- Postbuckling Response Simulations of Laminated Anisotropic Panels, 40
- Prebuckling Deflections and Lateral Buckling. I: Theory, 922
- Prebuckling Deflections and Lateral Buckling. II: Applications, 923
- Response Variability of Structures Subjected to Bifurcation Buckling, 222
- Schiffelized Angle Struts, 865
- Second-Order Inelastic Analysis Methods for Steel-Frame Design, 779
- Short-Term Behavior of Pultruded Fiber-Reinforced Plastic Frame, 866
- Slender Reinforced Concrete Bridge Towers under Cyclic Lateral Load, 6
- Square and Rectangular Hollow Sections Subject to Combined Actions, 792

Buckling

Stability of Frames with Grade Beam and Soil Interaction, 161

Stiffness Matrix for Nonlinear Analysis of Thin-Walled Frames, 265

Stitch Spacing and End Fixity in Seismic-Resistant Boxed Angle Braces, 917

Strength and Efficiency of Wood Box Columns, 796

Study on Maximum Strength of Cold-Formed Steel Columns, 764

Tests of Cold-Formed Channels with Local and Distortional Buckling, 857

Theoretical Study of Stability Criteria for X-Bracing Systems, 233

Thermomechanical Buckling of Multilayered Composite Plates, 175

Three-Dimensional Solutions for Thermal Buckling of Multilayered Anisotropic Plates, 195

Use of Engineering Strain and Trefftz Theory in Buckling of Columns, 283

Buffeting

Probabilistic Description of Buffeting Response of Long-Span Bridges, 300

Probabilistic Description of Buffeting Response of Long-Span Bridges: II, 301

Building codes

Design and Construction Considerations for Lunar Outpost, 33

Earthquakes: A New Look at Cracked Masonry, 1219

Moisture Content and Reliability-Based Design for Wood Members, 955

Retrofitting a Landmark, 1132

Roof-Snow Load for Seismic-Design Calculations, 887

Seismic Performance of Low-Rise Steel Perimeter Frames, 7

Technology Transfer in Building Construction—Case of Seismic Design, 97

Water Penetration in Laterally Loaded Brick-Wall Panels, 703

Building design

A Case of the Shakes, 1133

Compendium of Design Office Problems, 954

Limit-State Interactions in Reliability-Based Design for Wood Structures, 802

Overview of Existing Lunar Base Structural Concepts, 26

Building frames

Seismic Response of R/C Frames with Irregular Profiles, 786

Buildings

Comments on L'Ambiance Plaza Lifting Collar/Shearheads, 710

Computed Versus Observed Seismic Response and Damage of Masonry Buildings, 858

Concept Evaluation Methodology for Extraterrestrial Habitats, 35

Earthquakes: A New Look at Cracked Masonry, 1219

Effectiveness of Seismic Strengthening Techniques for Masonry Buildings, 863

Engineering Pre-engineered Buildings, 1199

Experimental Study of Sliding Isolated Structures with Uplift Restraint, 851

1992 ASCE TRANSACTIONS

Influence of ADAS Element Parameters on Building Seismic Response, 864

Investigation of L'Ambiance Plaza Building Collapse, 720

Mining for Building Expansion, 1227

Buildings, office

Compendium of Design Office Problems, 954

Buildings, residential

Manufactured Wood Joists—Noncollapse Failure, 709

Bulk cargo

Planning Operations of Bulk Loading Terminals by Simulation, 1099

Bulk density

Void Ratio of Noncohesive Soils and Similar Materials, 438

Bulk handling

Planning Operations of Bulk Loading Terminals by Simulation, 1099

Buoys

Laptop Automated Navigation Aid Positioning System with Differential GPS, 967

Buried pipes

Evaluation of Flowable Fly-Ash Backfill. I: Static Loading, 389

Evaluation of Flowable Fly-Ash Backfill. II: Dynamic Loading, 390

Measurement of Deformations in Buried Pipeline, 957

Mix Design for Flowable Fly-Ash Backfill Material, 690

Cables

Cable Structures and Lunar Environment, 36

Dynamic Behavior of Nonlinear Cable System. I, 206

Dynamic Behavior of Nonlinear Cable System. II, 207

Fatigue Resistance of Large-Diameter Cable for Cable-Stayed Bridges, 795

Nonlinear Impulsive Motions of Low-Tension Cables, 202

Slip Behavior of Cable against Saddle in Suspension Bridges, 777

Wire Recovery Length in Suspension Bridge Cable, 942

Cables, ropes

Axial and Free-Bending Analysis of Spiral Strands Made Simple, 296

Free-Bending Fatigue Life Estimation of Cables at Points of Fixity, 258

Simple Cord Composites, 270

Cadastral surveys

Ecuador's Rural Cadasters and Land Titling Project (CATIR): Technical Process, 966

Caissons

The Caisson Solution, 1226

Large-Scale Loading Tests of Shallow Footings in Pneumatic Caisson, 457

Manholes and Microtunneling, 1228

Calcium carbonate

Softening by Fluidized Bed Crystallizers, 338

SUBJECT INDEX

Ceilings

Calibration

- Alluvial Canals Adequacy, 609
- Appropriate Use of Deep-Bed Filtration Models, 365
- Calibration Strategy for Urban Catchment Parameters, 562
- Coarse-Grain Parallel Computing Using ISIS Tool Kit, 73
- Prediction of Natural Channel Hydraulic Roughness, 615

California

- Aesthetic Design Philosophy Utilized for California State Bridges, 1035
- California's Tradable Emissions Policy and Greenhouse Gas Control, 143
- Earthquakes: A New Look at Cracked Masonry, 1219
- The Last Freeway, 1162
- Perils of Point Loma, 1221

Canada

- Canada's Green Plan: Unique Approach to Preserving Environment, 751
- Future Impact of Trucking Reform on Railway Revenue, 1015

Canals

- Alluvial Canals Adequacy, 609
- Design of Control Algorithm for Operation of Irrigation Canals, 632
- Design of Trapezoidal Expansive Transitions, 575
- Field-Measured Hydraulic Resistance Characteristics in Vegetation-Infested Canals, 590
- Flow Capacity through Wide and Submerged Vegetal Channels, 622
- Flow in Trapezoidal Channels, 641
- Identification of Control System for Canal with Night Storage, 597
- Transients in Canal Network, 620
- Wave-Motion Stability in Canals with Automatic Controllers, 565

Cantilevers

- Bending of Rectangular Cross-Section Cantilever with Cylindrical Cutouts, 203
- Shear-Stress Distribution in Symmetrically Tapered Cantilever Beam, 941

Cap model

- Mixed Hardening, Three-Invariants Dependent Cap Model, 191

Capacity

- Planning Operations of Bulk Loading Terminals by Simulation, 1099
- Predicting Influence of Bank Vegetation on Channel Capacity, 530
- Probabilistic Design of Open Drainage Channels, 633

Capital

- Capturing Capital, 1164

Capital improvement

- Impact Fees: Practical Guide for Calculation and Implementation, 1032

Carbon dioxide

- Engineering-Econometric Model of Energy Demand, 146
- Equity and International Agreements for CO₂ Containment, 147

Carbonation

- Chloride Binding Capacity in Cement-Fly-Ash Pastes, 673

Careers

- Future Resources for Engineering, 727
- Women in Civil Engineering—Graduate's Perspective, 726

Cargo transportation

- Ship-Berth Link as Bulk Queueing System in Ports, 1108

Cartography

- Ecuador's Rural Cadasters and Land Titling Project (CATIR): Technical Process, 966

Cascade

- Waterfall Aeration Works, 1209

Case reports

- Case Studies of Structures with Man-Induced Vibrations, 791
- Comparison of Labor Productivity, 127
- Excavation and Support for the Urban Infrastructure, 1248
- Howe Truss Behavior Interpreted by Deflections, 716
- Integrated Data-Base Systems, 92
- International Air Transportation: A New International Airport, 1256
- Nondestructive Testing of Concrete Elements and Structures, 1261
- Performance of Masonry Walls: Case Study in Kuwait, 678
- Review of Wetting-Induced Collapse in Compacted Soil, 442

Cast-in-place pipes

- Field Test of 72-in.-Diameter Cast-in-Place Nonreinforced Concrete Pipe, 968

Cast-in-place structures

- Aesthetic Design Philosophy Utilized for California State Bridges, 1035
- The Crown and the Curtain Wall, 1194
- The OCEA Awards of Merit, 1178

Catchments

- Calibration Strategy for Urban Catchment Parameters, 562

Catenaries

- Effect of Static Offset on TLP Modeling, 158

Cathodic protection

- Tunnel Takes Cathodic Protection, 1220

Caverns

- Norway's Olympic Cavern, 1230

Cavitation

- Hydroturbine Cavitation Erosion, 152
- Influence of Liquid Length Variation in Hydraulic Transients, 566
- Necking of Creep-Cavitating Bars, 199

Cavities

- Bending of Rectangular Cross-Section Cantilever with Cylindrical Cutouts, 203

Ceilings

- A Face-Lift for Lincoln, 1200

Cellular structures

Dams Going Safely over the Top, 1122

Cement paste

Chloride Binding Capacity in Cement-Fly-Ash Pastes, 673

Fracture Toughness for Steel Fiber-Cement Paste Interfacial Zone, 688

Protected-Paste Volume of Air-Entrained Cement Paste. Part 1, 684

Cements

Effect of Particle Contact Bond on Shear Modulus, 430

Moisture Effects on Flexural Performance of Wood Fiber-Cement Composites, 692

Permeability of Roller Compacted Concrete, 674

Postcrack Scaling Relations for Fiber Reinforced Cementitious Composites, 675

Center-pivot irrigation

Optimum Center-Pivot Irrigation System Design with Tillage Effects, 593

Centrifuge

Modeling Effects of Chemical Explosives for Excavation on Moon, 18

Use of Explosives on the Moon, 19

Change orders

Overhead and Profit on Change Orders, 1193

SuperChange: Expert System for Analysis of Changes Claims, 114

Channel beds

Seepage Optimization for Trapezoidal Channel, 607

Velocity Profiles in Steep Open-Channel Flows, 480

Channel design

Modern Approach to Design of Grassed Channels, 623

Predicting Influence of Bank Vegetation on Channel Capacity, 530

Channel erosion

River Bed Degradation Due to Abrupt Outfall Lowering, 521

Channel flow

Dimensionally Homogeneous Manning's Formula, 548

Predicting Influence of Bank Vegetation on Channel Capacity, 530

Channels, waterways

Automated Operation of Pumping Stations in Russia, 610

Cohesionless Fine-Sediment Bed Forms in Shallow Flows, 510

Flow Measurement with Rectangular Free Overfall, 639

Hydraulic Geometry of Threshold Channels, 503

Rapidly Varied Flow Analysis of Undular Bore, 1105

Side Weir in Triangular Channel, 640

Velocity Distribution Inside and Above Branched Flexible Roughness, 636

Characteristics

Characteristic Dissipative Galerkin Scheme for Open-Channel Flow, 489

Charts

Design Charts for Timber Beam-Columns, 789

Chelating agents

Removing Selenium(IV) and Arsenic(V) Oxyanions with Tailored Chelating Polymers, 352

Chemical wastes

Water, Endangered Ecosystem: Assessment of Chemical Pollution, 335

Chemicals

Adding Up Admixtures, 1158

Chicago

Advanced Technology Applications in Chicago-Area Freeway Traffic Management Program, 997

The Great Chicago Flood of 1992, 1218

Waterfall Aeration Works, 1209

China, People's Republic of

Research/Application of System Engineering to Water Resources Systems, 1057

Reservoir Sedimentation. I: Delta and Density Current Deposits, 490

Reservoir Sedimentation. II: Reservoir Desiltation and Long-Term Storage Capacity, 491

Shape Optimization of Arch Dams for Static and Dynamic Loads, 925

Chlorides

Chloride Binding Capacity in Cement-Fly-Ash Pastes, 673

Estimation of Chloride Diffusion Coefficient and Tortuosity Factor for Mudstone, 420

Rebar Corrosion in $MgSO_4$ Solution, 693**Chromates**

Cleaning Up Chromium, 1146

Cisterns

Model for Biological Reactors Having Suspended and Attached Growths, 366

Wave Front Behavior in Adsorption Reactors, 339

Civil engineering

ASCE Should Have a Construction Safety Committee, 730

Challenges of The Changing Profession, 724

Computing in Civil Engineering and Geographic Information Systems Symposium, 1239

Computing in Civil Engineering: Current Trends and Future Directions, 737

Expert Systems for Civil Engineers: Knowledge Representation, 1249

Knowledge Acquisition in Civil Engineering, 1258

Military Leaders and Civil Engineers—An Air Force Academy Challenge, 742

Civil engineers

ASCE 1991 Salary Survey: Summary of Findings, 739

Civil Engineers Shaping Society: Our Social Responsibilities, 725

Depositions and Trial Testimony, A Positive Experience?, 735

Research Needs Related to Forensic Engineering of Constructed Facilities, 704

Visioning: The Future of Civil Engineering, 740

Claims

Hypertext and Claim Analysis, 133

SUBJECT INDEX

Codes

Resolving Contract Disputes Based on Differing-Site-Condition Clause, 136

Site Event Advisor: Expert System for Contract Claims, 86

Steering Clear of Tort Claims, 1179

SuperChange: Expert System for Analysis of Changes Claims, 114

Clamps

Boundary-Continuous Fourier Solution for Clamped Mindlin Plates, 239

Clarifiers

Influences of Density on Circular Clarifiers with Baffles, 357

Modeling and Pilot-Scale Experimental Verification for Predenitrification Process, 308

Classification

Evaluation and Control of Collapsible Soils, 447

Vehicle Classification Using Infrared Image Analysis, 981

Clay liners

Hydraulic Conductivity of Three Geosynthetic Clay Liners, 453

Landfill-Cover Conflict, 1234

Clay structure

Modeling Anisotropy of Clays at Critical State, 201

Clays

Better Cover-Ups, 1160

Development of Strain During Monotonic Shear of Soft Clay, 402

Diffuse Double-Layer Equations in SI Units, 475

Drainage Efficiency of Sand Layer in Layered Clay-Sand Reclamation, 378

Effective Cohesion for Compacted Clay, 397

Effects of Freezing on Hydraulic Conductivity of Compacted Clay, 423

Electroosmotic Contaminant-Removal Processes, 311

Electroosmotic Removal of Gasoline Hydrocarbons and TCE From Clay, 310

Empirical Estimation of Double-Layer Repulsive Force between Two Inclined Clay Particles of Finite Length, 399

Equations for Compression Index Approximation, 376

Generalized Creep and Stress Relaxation Model for Clays, 462

Interaction of Inorganic Leachate with Compacted Pozzolanic Fly Ash, 444

Inverse Analysis of Geotechnical Parameters on Improved Soft Bangkok Clay, 419

Modeling Anisotropy of Clays at Critical State, 201

Preliminary Design for NATM Tunnel Support in Soil, 394

Stability Analysis of Reinforced Embankments on Soft Soils, 474

Stress-Strain-Strength Responses of Compressible Chicago Glacial Clays, 454

Swell versus Saturation for Compacted Clay, 436

Total Stress Analysis of Cantilever Sheetpiling in Layered Clay, 422

Yielding of Mexico City Clay and Other Natural Clays, 417

Clean Water Act

Piles Over Problems Sites, 1155

Climatic changes

Diesel as Case of Consumer Choice in Alternative Transport Fuels, 145

Effects of Sea-Level Rise on Bays and Estuaries, 476

Equity and International Agreements for CO₂ Containment, 147

Climatic data

Analysis of Evaporative Flux Data for Various Climates, 613

Climatology

Equation for Evaporation Pan to Evapotranspiration Conversions, 642

Closed form solutions

Asymptotic Analysis of TLP Tendons and Risers, 157

Effects of Dead Loads in Dynamic Plates, 759

Exact Solution for General Torsion Problems Using Boundary Singularities, 284

Random Vibration under Propagating Excitation: Closed-Form Solutions, 188

Stability Analysis of Reinforced Embankments on Soft Soils, 474

Coagulation

TOC Removal by Coagulation and Softening, 333

Coal tar

Coal-Gas Conundrum, 1140

Coast Guard

Laptop Automated Navigation Aid Positioning System with Differential GPS, 967

Coastal engineering

Coastal Engineering Practice '92, 1237

Flow Field Induced by Sea Waves Over Brick-Pattern Ripples, 541

Model for Estimating Tidal Flushing of Small Embayments, 1117

Scour Around a Vertical Pile in Waves, 1078

Shoreline Profile of Stokes-Mode Edge Waves, 1085

Tidal Model Using Method of Characteristics, 1095

Coastal environment

Controlling Nitrogen in Coastal Waters, 1142

Creating Wetlands, 1186

Estuarine and Coastal Modeling, 1247

Coastal structures

Armor Stability on Submerged Breakwaters, 1092

Estimating Wave-Induced Bottom Velocities at Vertical Wall, 1089

Wave Runup on Smooth and Rock Slopes of Coastal Structures, 1111

Coating

Safeguarding Steel, 1151

Thermal Stresses in Bi-Coated Structures, 269

Codes

AASHTO Seismic Isolation Design Requirements for Highway Bridges, 772

Design Considerations for Using Adhesives in Shear Walls, 956

Design Engineer/Contractor Bankruptcy: Considerations for Debtor and Creditors, 663

Flexural Tensile Strength of Partially Grouted Concrete Masonry, 950

Wind Loads on Buildings with Sawtooth Roofs, 780

Coefficients

Bed-Load Coefficients, 555

Elastic Buckling Coefficients for Long, Unstiffened Plates, 305

Equation for Evaporation Pan to Evapotranspiration Conversions, 642

Momentum and Energy Coefficients Based on Power-Law Velocity Profile, 563

Cofferdams

Analytical Solution of Steady Seepage into Double-Walled Cofferdams, 185

Fly-Ash Slurry Island: I. Theoretical and Experimental Investigations, 681

Fly-Ash Slurry Island: II. Construction in Hakucho Ohashi Project, 682

Cohesion

Effective Cohesion for Compacted Clay, 397

Stability Theory of Cohesive Crack Model, 189

Cohesionless soils

Hydraulic Conductivity of Noncohesive Soils, 439

Mixed Hardening, Three-Invariants Dependent Cap Model, 191

Retaining Wall With Reinforced Cohesionless Backfill, 467

Settlements of Shallow Foundations on Cohesionless Soils, 385

Void Ratio of Noncohesive Soils and Similar Materials, 438

Cohesive sediment

Measurement and Prediction of Surface Shear Stress in Annular Flume, 543

Cohesive soils

Bearing Capacity on Nonhomogeneous Cohesive Soils under Embankments, 424

Constitutive Behavior of Stress-Induced Anisotropic Cohesive Soil, 440

Cold regions

Finite Element Analysis of Cold Embedments in Fresh Concrete, 52

Flexural Strength of Sand-Reinforced Ice, 3

Microorganism Survival in Ice-Covered Marine Environment, 53

Pressure of Crushed Ice as Mohr-Coulomb Material Against Flat, Axisymmetric Indentor, 58

Safety and Service Life of Equipment Designed for Cold Climate Operation, 56

Cold weather construction

Design Method for Frozen-Soil Retaining Wall, 54

Finite Element Analysis of Cold Embedments in Fresh Concrete, 52

Flexural Strength of Sand-Reinforced Ice, 3

Cold weather operations

Flow Rates at Signalized Intersections Under Cold Winter Conditions, 996

Safety and Service Life of Equipment Designed for Cold Climate Operation, 56

Winter Operability: Equipment Problems and Their Remedies, 57

Cold-formed steel

Effect of Strain Rate on Cold-Formed Steel Stub Columns, 935

Estimating Uplift Capacity of Light Steel Roof System, 804

Study on Maximum Strength of Cold-Formed Steel Columns, 764

Collapse

Buckle Propagation in Submarine Pipelines, 288

Collapse Mode of Elastic-Plastic Structures, 217

Comments on L'Ambiance Plaza Lifting Collar/Shearheads, 710

Evaluation and Control of Collapsible Soils, 447

Instability of Buildings Subjected to Earthquakes, 882

Investigation of L'Ambiance Plaza Building Collapse, 720

L'Ambiance Plaza: What Have We Learned, 1127

Load Shortening in Plastic Buckling of Cylinders, 267

Manufactured Wood Joists—Noncollapse Failure, 709

Reliability Analysis of Truss Structures with Multistate Elements. II, 807

Review of Wetting-Induced Collapse in Compacted Soil, 442

Collapsible soils

Evaluation and Control of Collapsible Soils, 447

Collision models

Mechanics of Saltating Grains. II, 500

Collisions

Collisional Restitution Dependence on Viscosity, 211

Colluvium

Strength Correlation Factor for Residual Soils, 396

Colorado River

Managing Lower Colorado River, 1056

Column strength

Study on Maximum Strength of Cold-Formed Steel Columns, 764

Columns

Analysis of Circular RC Columns for Short- and Long-Term Deformations, 793

Analytical Moment-Curvature Relations for Tied Concrete Columns, 785

Beam-Column Behavior of Fabricated Steel Tubular Members, 826

Buckling of Columns of Variable Flexural Rigidity, 192

Column Design in Steel Frames under Gravity Loads, 920

Complete Biaxial Load-Deformation Behavior of RC Columns, 901

Design Aids for Reinforced Concrete Columns, 924

Design Charts for Timber Beam-Columns, 789

Dynamics of Saturated Rocks. IV: Column and Borehole Problems, 261

Effect of Strain Rate on Cold-Formed Steel Stub Columns, 935

Elastic Stability of Composite Column, 295

Flexural-Torsional Stability of Thin-Walled Columns, 299

SUBJECT INDEX

Composite materials

- Modified Stub-Girder Floor System: Full-Scale Tests, 939
- New Stability Equation for Columns in Braced Frames, 861
- Re-examination of Ylinen and Other Column Equations, 908
- Second-Order Inelastic Analysis Methods for Steel-Frame Design, 779
- Stability of Column Lowered Into Liquid of Higher Density, 166
- Study on Maximum Strength of Cold-Formed Steel Columns, 764
- Use of Engineering Strain and Trefftz Theory in Buckling of Columns, 283
- Communication**
- Design-Build Goes Public, 1184
- Improving Specifications, 1202
- Professionalism: Cornerstone of Engineering, 744
- Project Management: Keys to Success, 1153
- Technology is Here—Are You Ready?, 661
- Communication equipment**
- Assessing the Potential of E-Mail for Engineers: Case Study, 667
- Communication skills**
- Conflict Management Training for Today's Engineering Managers, 664
- Improving Specifications, 1202
- Community planning**
- PMSC: Pavement Management System for Small Communities, 984
- Community relations**
- Providing Lead Role in Work-Force Diversity, 728
- Community support**
- Planning Water Supply and Sanitation Projects in Developing Countries, 1058
- Compacted soils**
- Behavior of Compacted Lunar Simulants Using New Vacuum Triaxial Device, 44
- Better Cover-Ups, 1160
- Effective Cohesion for Compacted Clay, 397
- Compaction**
- Compaction Quality Control in Granular Shell of Earth Dam, 433
- Damage of Entryway Stairs due to Settlement of Gravel Backfill, 714
- Dynamic Compaction Analysis, 425
- Dynamic Compaction of Nuclear Waste, 1144
- Evaluation and Control of Collapsible Soils, 447
- Postdensification Penetration Resistance of Clean Sands, 12
- Review of Wetting-Induced Collapse in Compacted Soil, 442
- Swell versus Saturation for Compacted Clay, 436
- Comparative studies**
- Comparison of Labor Productivity, 127
- Deformational Behavior of Fiber-Reinforced Concrete Beams in Bending, 906
- Generalized Slope Stability Analysis: Interpretation, Modification, and Comparison, 451
- Laboratory Simulations of Directionally Spread Shallowing Waves, 1083
- Laboratory versus Nondestructive Testing for Pavement Design, 980
- Strength of Concrete-Filled Thin-Walled Steel Box Columns: Experiment, 927
- Underground Research: Here and There, 1229
- Compatibility**
- Frame Buckling Analysis with Full Consideration of Joint Compatibilities, 205
- Model Correction via Compatible Element Method, 39
- Competition**
- ADR, TQM, Partnering, and Other Management Fantasies, 749
- Bidding Strategy: Winning over Key Competitors, 99
- Critical Issues for Engineering Managers, 658
- Critical Success Factors in Winning BOT Contracts, 102
- Future Impact of Trucking Reform on Railway Revenue, 1015
- Improving International Competitiveness, 733
- Vertical Business Integration Strategies for Construction, 653
- Competitive bidding**
- Bidding Strategy: Winning over Key Competitors, 99
- Multiparameter Bidding System—Innovation in Contract Administration, 98
- Compliance**
- Density Changes During Undrained Loading—Membrane Compliance, 470
- Composite beams**
- Composite Beams with Partial Interaction under Sustained Loads, 862
- Creep Effects in Composite Beams with Flexible Shear Connectors, 872
- Reinforced Concrete Beams with Plates Glued to Their Soffits, 870
- Shear Connectors in Composite Beams with Longitudinally Cracked Slabs, 869
- Slab Behavior in Composite Beams at Openings. I: Analysis, 884
- Slab Behavior in Composite Beams at Openings. II: Tests and Verification, 885
- Straight, Single-Tapered Composite I-Beams of Orthotropic Materials, 701
- Composite columns**
- Statistical Analysis of Slender Composite Beam-Column Strength, 832
- Strength of Concrete-Filled Thin-Walled Steel Box Columns: Experiment, 927
- Composite materials**
- Cracking and Debonding on Bimaterial Interface under Uniform Loading, 219
- Creep and Creep Rupture of Metallic Composites, 251
- Finite Element Analysis of Thin-Walled Curved Beams Made of Composites, 871
- Fracture Analysis of Mortar-Aggregate Interfaces in Concrete, 276
- Fracture-Based Two-Way Debonding Model for Discontinuous Fibers in Elastic Matrix, 294

- Materials: Performance and Prevention of Deficiencies and Failures, 1260
- Micromechanics-Based Constitutive Model for Interface Shear, 231
- Modeling Stiffness Degradation in Filamentary Composite Materials, 686
- Moisture Effects on Flexural Performance of Wood Fiber-Cement Composites, 692
- Postbuckling of Polar Orthotropic Circular Plates—Retrospective, 280
- Postbuckling Response Simulations of Laminated Anisotropic Panels, 40
- Postcrack Sealing Relations for Fiber Reinforced Cementitious Composites, 675
- Predictions of Thermal Characteristics for Mixed Porous Media, 685
- Prestressed FRP Sheets as External Reinforcement of Wood Members, 829
- Short-Term Behavior of Pultruded Fiber-Reinforced Plastic Frame, 866
- Simple Cord Composites, 270
- Steady-State and Multiple Cracking of Short Random Fiber Composites, 291
- Vibration Control of Beams with Embedded Smart Composite Material, 49

Composite structures

- Behavior of Partially Grout-Filled Damaged Tubular Members, 928
- Commentary on Proposed Specification for Structural Steel Beams with Web Openings (with Design Example), 947
- Composite Beams with Partial Interaction under Sustained Loads, 862
- Design/Control Optimization of Cross-Ply Laminates under Buckling and Vibration, 24
- Dimensional Analysis of Buckling of Stiffened Composite Shells, 187
- Distortional Buckling Solutions for Continuous Composite Beams, 761
- Ductile Multiple-Anchor Steel-to-Concrete Connections, 850
- Elastic Buckling of Incomplete Composite Plates, 154
- Elastic Stability of Composite Column, 295
- FRP-Reinforced Wood as Structural Material, 694
- Nonlinear Free Vibration of Laminated Composite Plates, 164
- Parametric Study of Continuous Prestressed Composite Girders, 767
- Prestressed Composite Girders. I: Experimental Study for Negative Moment, 910
- Prestressed Composite Girders. II: Analytical Study for Negative Moment, 911
- Properties of PVB Interlayer Used in Laminated Glass, 677
- Proposed Specification for Structural Steel Beams with Web Openings, 946
- Simultaneous Design and Control of Stiffened Laminated Composite Structures, 23
- Steady-State Nonlinear Heat Transfer in Multilayered Composite Panels, 252
- Strength of Composite Slabs, 889
- Thermomechanical Buckling of Multilayered Composite Plates, 175
- Transverse Shear Effect on Flutter of Composite Panels, 47

Composting

- Fundamentals and Application of Windrow Composting, 11

Compressibility

- Engineering Behavior of Water Treatment Sludge, 358
- Settlements of Shallow Foundations on Cohesionless Soils, 385
- Stress-Strain-Strength Responses of Compressible Chicago Glacial Clays, 454

Compression

- C_d/C_c Concept Applied to Compression of Peat, 434
- Compression Failure of Quasibrittle Material: Nonlocal Microplane Model, 186
- Compressive Behavior of Glass-Fiber-Reinforced Polymer Concrete, 679
- Mixed Hardening, Three-Invariants Dependent Cap Model, 191
- Normal- and High-Strength Fiber-Reinforced Concrete under Compression, 702
- Postdensification Penetration Resistance of Clean Sands, 12
- Stress-Strain Curves for Brick Masonry in Biaxial Compression, 839
- Theoretical Study of Stability Criteria for X-Bracing Systems, 233

Compression index

- C_d/C_c Concept Applied to Compression of Peat, 434
- Equations for Compression Index Approximation, 376

Compression tests

- Local and Interaction Buckling of Polygonal Section Steel Columns, 904

Compressive strength

- Mix Design for Flowable Fly-Ash Backfill Material, 690
- Rate Effects in Uniaxial Dynamic Compression of Concrete, 160
- Schiffelized Angle Struts, 865
- Strength and Corrosion Resistance of Superplasticized Concretes, 680
- Strength and Shrinkage of Natural Pozzolanic Mortar in Hot Weather, 683

Computation

- 1-D Open-Channel Flow Simulation Using TVD-McCormack Scheme, 550
- Arc-Length Method for Passing Limit Points in Structural Calculation, 766
- Conceptual Bed-Load Transport Model and Verification for Sediment Mixtures, 535
- Diffuse Double-Layer Equations in SI Units, 475
- Efficient Calculation of Transient Flow in Simple Pipe Networks, 527
- Fundamental Frequency of Tapered Plates by Differential Quadrature, 225
- Geometrical Imperfections on Inelastic Frame Behavior, 837
- Mutual Residual Energy Method for Parameter Estimation in Structures, 769
- Open-Channel Flow Algorithm in Newton-Raphson Form, 594
- Plane Frame Optimum Design Environment Based on Genetic Algorithm, 931

SUBJECT INDEX

- Prediction of Natural Channel Hydraulic Roughness, 615
- Random Vibration under Propagating Excitation:
Closed-Form Solutions, 188
- Temporal Variation of Scour Around Circular Bridge
Piers, 532
- Computer aided drafting (CAD)**
- CAD and the Corps, 1169
- Computational Laboratory for Discrete Element
Geomechanics, 67
- Highway Design in 3-D, 1173
- Integrated Data-Base Systems, 92
- Landfills: Anatomy of Automated Design, 1141
- Transaction-Management Issues in Collaborative
Engineering, 65
- Use of Mathematical Programming Methods for
Complex Systems, 1053
- Computer analysis**
- Data Abstraction in Engineering Software Develop-
ment, 76
- Computer applications**
- Advanced Technology Applications in Chicago-Area
Freeway Traffic Management Program, 997
- Appropriate Technology for Flood Warnings, 1172
- Aspects of Virtual Master Builder, 745
- Assessing the Potential of E-Mail for Engineers: Case
Study, 667
- Automated Construction Field-Data Management
System, 1001
- Coarse-Grain Parallel Computing Using ISIS Tool
Kit, 73
- Computer-Controlled Brick Masonry, 68
- Computing in Civil Engineering and Geographic
Information Systems Symposium, 1239
- Computing in Civil Engineering: Current Trends and
Future Directions, 737
- The Connecticut Photolog Laser Videodisc-Based
Pavement Rating System, 983
- Cranes, Concrete, Construction...and Computers,
1167
- Distributed Approach to Optimized Control of Street
Traffic Signals, 974
- Efficient Calculation of Transient Flow in Simple
Pipe Networks, 527
- EQSWP: Extended Unsteady-Flow Double-Sweep
Equation Solver, 509
- Equation for Evaporation Pan to Evapotranspiration
Conversions, 642
- Expert System for Anaerobic-Digestion-Process
Operation, 364
- Expert Systems: Ready to Hit the Road?, 1174
- Flavors and Mixins of Expert Systems Technology
Transfer Model for AEC Industry, 116
- Hypertext and Claim Analysis, 133
- Integrating Facility Delivery through Spatial Infor-
mation, 1025
- Knowledge Acquisition and Development for Form-
work Selection System, 101
- Knowledge-Based Advisory System for Public-Sector
Design-Build, 85
- Linking Data Bases to Hydraulic Computations, 63
- Mesh Generation for Estuarine Flow Modeling, 1115

Computer programming

- Microcomputer-Based Project Management for Small
Engineering Firms, 648
- Neuroform—Neural Network System for Vertical
Formwork Selection, 70
- New Stability Equation for Columns in Braced
Frames, 861
- Representing Building Product Information Using
Hypermedia, 60
- Smart Structures, 1222
- Statically Indeterminate Trusses Programmed in
Logic, 84
- Structural Design of Lunar Radio Telescope Using
Interactive CAD, 16
- Technology is Here—Are You Ready?, 661
- Testing Photoelectric Sensor System to Classify Vehi-
cles, 998
- Three-Dimensional Characteristics Model of Wind-
Generated Turbulent Flow, 244
- Tidal Model Using Method of Characteristics, 1095
- Total Stress Analysis of Cantilever Sheetpiling in
Layered Clay, 422
- Trend in Local Area Network Utilization, 646
- Urban Transit Guides Application of Advanced
Train Control, 977
- Water-Quality Modeling for Decision Making, 1054
- Water's New World, 1168
- Computer graphics**
- Computer Graphics in Detailing Strut-Tie Models,
72
- Construction Applications of Relational Data Bases
in Three-Dimensional GIS, 64
- Feedback Mechanisms for Operational Simulation,
69
- Computer languages**
- Object-Oriented Programming for Scientific Codes. I:
Thoughts and Concepts, 87
- Object-Oriented Programming for Scientific Codes.
II: Examples in C++, 88
- Computer models**
- Design Aids for Reinforced Concrete Columns, 924
- Irrigation Land Management Model, 637
- Modeling and Simulating Learning Development in
Construction, 131
- Multilayered, Priority-Based Simulation of Conjunc-
tive Facilities, 1038
- Path-Finder: AI-Based Path Planning System, 66
- Tuned Mass Dampers for Balcony Vibration Control,
797
- Wave Front Behavior in Adsorption Reactors, 339
- Computer networks**
- Assessing the Potential of E-Mail for Engineers: Case
Study, 667
- Computer programming**
- Data Abstraction in Engineering Software Develop-
ment, 76
- Expert Systems for Civil Engineers: Knowledge Rep-
resentation, 1249
- Object-Oriented Approaches for Integrated Engineer-
ing Design Systems, 74
- Object-Oriented Programming for Scientific Codes. I:
Thoughts and Concepts, 87

Computer programming

Object-Oriented Programming for Scientific Codes. II: Examples in C++, 88

Statically Determinate Trusses Programmed in Logic, 84

Computer programming languages

Object-Oriented Finite Element and Graphics Data-Translation Facility, 77

Object-Oriented Model of Engineering Design Standards, 78

Object-Oriented Programming in Robotics Research for Excavation, 80

Computer programs

Heavy Construction Estimates, With and Without Computers, 122

Open-Channel Flow Algorithm in Newton-Raphson Form, 594

Solving Circular Curve Using Newton-Raphson's Method, 959

User-Friendly PC-Based Design Package for Gravity-Type Seawalls, 1097

Computer software

Advanced Software Design and Standards for Traffic Signal Control, 995

Computerized Solution for Signalized Intersection Service Volumes, 1000

Data Abstraction in Engineering Software Development, 76

Elastic Solutions for Arbitrarily Shaped Foundations, 414

Highway Design in 3-D, 1173

Landfills: Anatomy of Automated Design, 1141

Object-Oriented Approaches for Integrated Engineering Design Systems, 74

Object-Oriented Finite Element and Graphics Data-Translation Facility, 77

Object-Oriented Programming in Robotics Research for Excavation, 80

Orthometric Heights from Global Positioning System, 962

Representing Building Product Information Using Hypermedia, 60

Total Stress Analysis of Cantilever Sheetpiling in Layered Clay, 422

Urban Transit Guides Application of Advanced Train Control, 977

Computerized design

Boston's City within a City, 1206

CAD and the Corps, 1169

Design of Bridge Pier Pile Foundations for Ship Impact, 877

Highway Design in 3-D, 1173

Integrated Data-Base Systems, 92

Landfills: Anatomy of Automated Design, 1141

Object-Oriented Approaches for Integrated Engineering Design Systems, 74

Solid Modeling of RC Beams: 1. Data Structures and Algorithms, 81

Solid Modeling of RC Beams: 2. Computational Environment, 82

Structural Design of Lunar Radio Telescope Using Interactive CAD, 16

Transaction-Management Issues in Collaborative Engineering, 65

1992 ASCE TRANSACTIONS

Use of Mathematical Programming Methods for Complex Systems, 1053

User-Friendly PC-Based Design Package for Gravity-Type Seawalls, 1097

Water's New World, 1168

Computerized simulation

Modeling Stiffness Degradation in Filamentary Composite Materials, 686

Restricting Rockfalls, 1214

Routing Debris Flows with Particle Segregation, 558

Simulating THM Formation Potential in Sacramento Delta: Part I, 1067

Simulating THM Formation Potential in the Sacramento Delta: Part II, 1068

Computers

Coarse-Grain Parallel Computing Using ISIS Tool Kit, 73

Computing in Civil Engineering and Geographic Information Systems Symposium, 1239

Computing in Civil Engineering: Current Trends and Future Directions, 737

Concentration

Evaluation of Ozone Disinfection Systems: Characteristic Concentration C , 336

Concentration time

Sampling of Wastewater Effluent, 318

Concrete

Adding Up Admixtures, 1158

Backfill-Stiffened Foundation Wall Design, 465

The Caisson Solution, 1226

Compression Failure of Quasibrittle Material: Nonlocal Microplane Model, 186

Compressive Softening Model for Concrete, 245

Constitutive Model for Concrete in Strain Space, 268

Creep Effects in Composite Beams with Flexible Shear Connectors, 872

Creep Recovery of Prepacked Aggregate Concrete, 695

The Crown and the Curtain Wall, 1194

Damage of Concrete in Fatigue, 287

Dams Going Safely over the Top, 1122

Deformational Behavior of Fiber-Reinforced Concrete Beams in Bending, 906

Ductile Multiple-Anchor Steel-to-Concrete Connections, 850

Durability of MSW Fly-Ash Concrete, 699

FEM Modeling of Fictitious Crack Propagation in Concrete, 179

Finite Element Analysis of Cold Embedments in Fresh Concrete, 52

Finite Element Modeling of Concrete Expansion and Confinement, 890

Fracture Mechanics and Size Effect of Concrete in Tension, 936

Government-Industry Cooperation: Fast-Track Concrete Innovation, 117

Investigation of L'Ambiance Plaza Building Collapse, 720

Microplane Model for Cyclic Triaxial Behavior of Concrete, 234

MSW Incinerator Ash as Aggregate in Concrete and Masonry, 698

SUBJECT INDEX

Concrete, reinforced

- Nondestructive Testing of Concrete Elements and Structures, 1261
- One-Dimensional Model for Analysis of CRC Pavement Growth, 1004
- Parametric Study of Continuous Prestressed Composite Girders, 767
- Prestressed Composite Girders. I: Experimental Study for Negative Moment, 910
- Prestressed Composite Girders. II: Analytical Study for Negative Moment, 911
- Prevention of Stress Relaxation in Viscoelastic Structures, 860
- Put to the Test, 1231
- Rate Effects in Uniaxial Dynamic Compression of Concrete, 160
- Reliability Analysis of Creep and Shrinkage Effects, 886
- Seattle Swings Again, 1177
- Stability of Concrete Gravity Dams with Drained and Finite Cracks, 149
- Statistical Analysis of Slender Composite Beam-Column Strength, 832
- Strain-Based Constitutive Model with Mixed Evolution Rules for Concrete, 223
- Strength and Corrosion Resistance of Superplasticized Concretes, 680
- Strength and Ductility of Confined Concrete, 847
- Turning on the Waterworks, 1190
- Concrete construction**
- Put to the Test, 1231
- Concrete durability**
- Protected-Paste Volume of Air-Entrained Cement Paste. Part 1, 684
- Concrete masonry**
- Flexural Tensile Strength of Partially Grouted Concrete Masonry, 950
- MSW Incinerator Ash as Aggregate in Concrete and Masonry, 698
- Concrete pavements**
- Government-Industry Cooperation: Fast-Track Concrete Innovation, 117
- One-Dimensional Model for Analysis of CRC Pavement Growth, 1004
- Concrete pipes**
- Field Test of 72-in.-Diameter Cast-in-Place Nonreinforced Concrete Pipe, 968
- Concrete placing**
- Automation of Concrete Slab-on-Grade Construction, 134
- Concrete, post-tensioned**
- Analysis of Delamination of Post-Tensioned Silos, 814
- Performance of Viaduct Girders under Static and Dynamic Loads, 711
- Concrete, precast**
- Behavior of Concrete Hollow-Block Masonry Prisms under Axial Compression, 855
- Performance of Viaduct Girders under Static and Dynamic Loads, 711
- Concrete, prestressed**
- Aesthetic Design Philosophy Utilized for California State Bridges, 1035
- Analysis of Delamination of Post-Tensioned Silos, 814
- Bond Anchorage of Pretensioned FRP Tendon at Force Release, 915
- Buckling of Suspended Cambered Girders, 784
- Building Better Bridges: Concrete Vs. Steel, 1182
- Drying and Cracking Effects in Box-Girder Bridge Segment, 773
- Prestressed-Concrete Railway-Bridge Live-Load Strains, 776
- Service Load Behavior of Concrete Members Prestressed with Unbonded Tendons, 900
- Static Response of Prestressed Girders with Openings, 783
- Concrete, reinforced**
- Analysis of Circular RC Columns for Short- and Long-Term Deformations, 793
- Analytical Moment-Curvature Relations for Tied Concrete Columns, 785
- Arc-Length Method for Passing Limit Points in Structural Calculation, 766
- Complete Biaxial Load-Deformation Behavior of RC Columns, 901
- Computer Graphics in Detailing Strut-Tie Models, 72
- Corrosion Cracking in Relation to Bar Diameter, Cover, and Concrete Quality, 696
- Crack Analysis of Reinforced Concrete Tension Members, 875
- Cracking Response of RC Members Subjected to Uniaxial Tension, 824
- Design Aids for Reinforced Concrete Columns, 924
- Design of RC Sections with Generic Shape under Biaxial Bending, 822
- Ductility and Detailing Requirements of Bearing Wall Buildings, 849
- Fiber: Good For the Concrete Diet?, 1157
- Field Load Test on Full-Scale Reinforced Concrete Frame, 715
- Finite Element Model for Seismic RC Coupled Walls Having Slender Coupling Beams, 921
- Flexural Analysis of Reinforced Concrete Beams Containing Steel Fibers, 914
- Hysteretic Behavior of Anchorage Slip in R/C Members, 893
- Hysteretic Response of Reinforced-Concrete Infilled Frames, 876
- In-Plane Floor Deformations in RC Structures, 930
- Model for Optimal Design of Reinforced Concrete Beam, 940
- Modeling Slab Contribution in Frame Connections, 895
- Nonlinear Cyclic Behavior of Reinforcing Bars Including Buckling, 943
- Normal- and High-Strength Fiber-Reinforced Concrete under Compression, 702
- One-Dimensional Model for Analysis of CRC Pavement Growth, 1004
- Performance of Viaduct Girders under Static and Dynamic Loads, 711
- Predicting Behavior of Cyclically Loaded RC Structures, 790
- Properties of Aramid-Fiber Reinforced Concrete and SIFCON, 672

Concrete, reinforced

- Rebar Corrosion in $MgSO_4$ Solution, 693
Reinforced Concrete Beams with Plates Glued to Their Soffits, 870
Reinforcement Anchorage Slip under Monotonic Loading, 892
Seismic Behavior and Shear Strength of Framed Joint Using Steel-Fiber Reinforced Concrete, 775
Seismic Response of Pacific Park Plaza. I: Data and Preliminary Analysis, 845
Seismic Response of R/C Frames with Irregular Profiles, 786
Shear Connectors in Composite Beams with Longitudinally Cracked Slabs, 869
Slender Reinforced Concrete Bridge Towers under Cyclic Lateral Load, 6
Softening and Snap-Through Behavior of Reinforced Elements, 246
Solid Modeling of RC Beams: 1. Data Structures and Algorithms, 81
Solid Modeling of RC Beams: 2. Computational Environment, 82
Strength of Composite Slabs, 889
Tying Back a Landslide, 1225

Concrete slabs

- Automation of Concrete Slab-on-Grade Construction, 134
Dynamic Stiffness Analysis of Concrete Pavement Slabs, 1003
Elastic Buckling of Incomplete Composite Plates, 154
Method Proposed for Construction of Multispan Cable-Stayed Bridges, 106
Moisture Migration Through Concrete Floor Slabs, 707
Slab Behavior in Composite Beams at Openings. I: Analysis, 884
Slab Behavior in Composite Beams at Openings. II: Tests and Verification, 885

Concrete structures

- Drying and Cracking Effects in Box-Girder Bridge Segment, 773
Learning to Love NDT, 1121
Nondestructive Testing of Concrete Elements and Structures, 1261
Peaches and Concrete, 1128
RCC at 10, 1207
Yield Safety, Cracking Control, and Moment Redistribution, 781

Cone penetration

- Time-Dependent Cone Penetration Resistance Due to Blasting, 429

Confinement

- Analytical Moment-Curvature Relations for Tied Concrete Columns, 785
Ductility and Detailing Requirements of Bearing Wall Buildings, 849
Finite Element Modeling of Concrete Expansion and Confinement, 890
Strength and Ductility of Confined Concrete, 847

Conflict

- Conflict Management Training for Today's Engineering Managers, 664
Resolving Construction Disputes by Mediation: Hong Kong Experience, 671

1992 ASCE TRANSACTIONS

- Resolving Contract Disputes Based on Misrepresentations, 118

Conflict of interest

- Conflict of Interest in Deep-Draft Anchorage Usage—Application of QT, 1082

Conformal mapping

- Analytical Solution of Steady Seepage into Double-Walled Cofferdams, 185

Connections

- ASCE LRFD Method for Stainless Steel Structures, 817
Bracing Requirements of Plane Frames, 844
Compendium of Design Office Problems, 954
Creep Effects in Composite Beams with Flexible Shear Connectors, 872
Design Considerations for Using Adhesives in Shear Walls, 956
Ductile Multiple-Anchor Steel-to-Concrete Connections, 850
Experimental Performance of Long Links in Eccentrically Braced Frames, 929
Modeling Slab Contribution in Frame Connections, 895
Modified Stub-Girder Floor System: Full-Scale Tests, 939
Prying and Shear in End-Plate Connection Design, 831
Seismic Analysis Design of Frames with Viscoelastic Connections, 894
Strength of Lag-Screw Connections, 916
Wood Connections with Heavy Bolts and Steel Plates, 4

Connections, bolted

- Bolted Connections in Wood under Bending/Tension Loading, 813
Effective Strength of 'Square-and-Diagonal' Double-Layer Grid, 760
Reliability of Bolted Wood Connections, 949

Connections, welded

- Analysis of Welded Tubular Connections Using Continuum Damage Mechanics, 803
Weldment Design for RHS Truss Connections. I: Applications, 912
Weldment Design for RHS Truss Connections. II: Experimentation, 913

Conservation

- Canada's Green Plan: Unique Approach to Preserving Environment, 751
Review of Equations of Conservation in Curvilinear Coordinates, 292

Consolidation

- Adequacy of Surface Water-Supply Systems: Case Study, 1073
Anisotropic Plasticity Model for Undrained Cyclic Behavior of Clays. I: Theory, 379
Anisotropic Plasticity Model for Undrained Cyclic Behavior of Clays. II: Verification, 380
 C_d/C_c Concept Applied to Compression of Peat, 434
Drainage Efficiency of Sand Layer in Layered Clay-Sand Reclamation, 378
Equations for Compression Index Approximation, 376

SUBJECT INDEX

Construction companies

- Flow-Deformation Response of Dual-Porosity Media, 374
- Soil Plug Response in Open-Ended Pipe Piles, 404
- Consolidation, soils**
- Effects of K_0 and Overconsolidation on Uplift Capacity, 446
- Stress-Strain-Strength Responses of Compressible Chicago Glacial Clays, 454
- Constitutive equations**
- Generalized Creep and Stress Relaxation Model for Clays, 462
- Constitutive models**
- Anisotropic Plasticity Model for Undrained Cyclic Behavior of Clays. I: Theory, 379
- Anisotropic Plasticity Model for Undrained Cyclic Behavior of Clays. II: Verification, 380
- Compression Failure of Quasibrittle Material: Nonlocal Microplane Model, 186
- Constitutive Model for Concrete in Strain Space, 268
- Constitutive Model for Ice, 170
- Elastic-Plastic Analysis of Footings on Anisotropic Soils, 388
- Hierarchical Single-Surface Model for Static and Cyclic Behavior of Interfaces, 212
- Micromechanics Modeling for Stress-Strain Behavior of Granular Soils. I: Theory, 472
- Micromechanics Modeling for Stress-Strain Behavior of Granular Soils. II: Evaluation, 473
- Micromechanics-Based Constitutive Model for Interface Shear, 231
- Microplane Model for Cyclic Triaxial Behavior of Concrete, 234
- Modeling Anisotropy of Clays at Critical State, 201
- Predicting Behavior of Cyclically Loaded RC Structures, 790
- Strain-Based Constitutive Model with Mixed Evolution Rules for Concrete, 223
- Constitutive relations**
- Compressive Softening Model for Concrete, 245
- Simple Double-Hardening Model for Geomaterials, 411
- Constraints**
- Plane Frame Optimum Design Environment Based on Genetic Algorithm, 931
- Constructibility**
- Constructability for Drilled Shafts, 94
- Overview of Existing Lunar Base Structural Concepts, 26
- Path-Finder: AI-Based Path Planning System, 66
- Role of Designers in Construction Worker Safety, 130
- Construction**
- Advancing Anchorage Technology, 1181
- ASCE Should Have a Construction Safety Committee, 730
- Behavior of Compacted Lunar Simulants Using New Vacuum Triaxial Device, 44
- Causes of Quality Deviations in Design and Construction, 91
- Comparison of Labor Productivity, 127
- CONSCHE: Expert System for Scheduling of Modular Construction Projects, 119
- Construction of Pressurized, Self-Supporting Membrane Structure on Moon, 34
- Construction Project Planning Process Model for Small-Medium Builders, 128
- Cranes, Concrete, Construction...and Computers, 1167
- Critical Success Factors for Construction Projects, 95
- Design-Build Goes Public, 1184
- Efficacy of Drug Testing Programs Implemented by Contractors, 137
- Engineering Issues for Early Lunar-Based Telescopes, 38
- Experience-Based Issues in Construction Education, 754
- Expert System for Construction Safety. I: Fault-Tree Models, 722
- Expert System for Construction Safety. II: Knowledge Base, 723
- Feedback Mechanisms for Operational Simulation, 69
- Heavy Construction Estimates, With and Without Computers, 122
- Hypertext and Claim Analysis, 133
- Indigenous Resource Utilization in Design of Advanced Lunar Facility, 31
- In-Place Shear Testing of Tile, 691
- Integrating Facility Delivery through Spatial Information, 1025
- Modeling and Simulating Learning Development in Construction, 131
- Noncontractual Methods of Integration on Construction Projects, 113
- OCEA, American-Style, 1180
- Owner Involvement in Construction Projects in Saudi Arabia, 655
- RCC at 10, 1207
- Representing Building Product Information Using Hypermedia, 60
- Resolving Contract Disputes Based on Differing-Site-Condition Clause, 136
- Resolving Contract Disputes Based on Misrepresentations, 118
- Site Event Advisor: Expert System for Contract Claims, 86
- Statistical Properties of Construction Duration Data, 121
- Strategies for Technology Push: Lessons from Construction Innovations, 120
- Technical Issues for Lunar Base Structures, 27
- Tensile Terminal, 1215
- Tolerance Limits for Geometric Imperfections in Hyperbolic Cooling Towers, 873
- Tomorrow's Schools, 1123
- Utilization of Waste Materials in Civil Engineering Construction, 1274
- Water Penetration in Laterally Loaded Brick-Wall Panels, 703
- Construction companies**
- Design Engineer/Contractor Bankruptcy: Considerations for Debtor and Creditors, 663
- Financial Incentive Programs for Average-Size Construction Firm, 129
- Financial Performance Analysis for Construction Industry, 111

Improving International Competitiveness, 733
Socioeconomic Accounting in Construction, 738

Construction costs

Causes of Quality Deviations in Design and Construction, 91

Monte Carlo Technique with Correlated Random Variables, 105

A New Fast Track for Public Works, 1129

Selection of Design/Build Proposal Using Fuzzy-Logic System, 108

Construction equipment

Bored Tunneling for Singapore Metro, 112

Winter Operability: Equipment Problems and Their Remedies, 57

Construction industry

ADR, TQM, Partnering, and Other Management Fantasies, 749

A Challenge for Research, 115

Computer-Controlled Brick Masonry, 68

Cranes, Concrete, Construction...and Computers, 1167

Education and Research in Japan's Construction Industry, 747

Effects of Scheduled Overtime on Labor Productivity, 93

Evaluation of Advanced Construction Technology with AHP Method, 124

Flavors and Mixins of Expert Systems Technology Transfer Model for AEC Industry, 116

Government-Industry Cooperation: Fast-Track Concrete Innovation, 117

Howdy, Partner, 1147

Implementation of TQM in Building Design and Construction, 665

Multiparameter Bidding System—Innovation in Contract Administration, 98

Quality Management Organizations and Techniques, 96

R&D Cooperation by Swedish Contractors, 89

Resolving Construction Disputes by Mediation: Hong Kong Experience, 671

Substitutes for Leadership and Unionized Construction Carpenters, 110

Technology Transfer in Building Construction—Case of Seismic Design, 97

Trend in Local Area Network Utilization, 646

Underwriting Process for Construction Contract Bonds, 649

Using Quality Circles to Raise Productivity and Quality of Work Life, 90

Vertical Business Integration Strategies for Construction, 653

Construction management

Automated Construction Field-Data Management System, 1001

Comparison of Labor Productivity, 127

Consequential Equipment Costs Associated with Lack of Availability and Downtime, 13

Critical Success Factors for Construction Projects, 95

Knowledge-Based Advisory System for Public-Sector Design-Build, 85

Lessons Learned—Milwaukee Water Pollution Abatement Program, 656

Life in the Fast Track, 1150

Modeling and Simulating Learning Development in Construction, 131

A New Fast Track for Public Works, 1129

NIAM Conceptual Data-Base Design in Construction Management, 62

Noncontractual Methods of Integration on Construction Projects, 113

Quantitative Study of Contractor Evaluation Programs and Their Impact, 126

Schedule "Games" People Play, and Some Suggested "Remedies", 652

SightPlan Model for Site Layout, 135

Site-Layout Modeling: How Can Artificial Intelligence Help?, 125

Socioeconomic Accounting in Construction, 738

Staffing Up for a Major Program, 1124

SuperChange: Expert System for Analysis of Changes Claims, 114

Wastewater under Home Plate, 1212

Construction materials

Flexural Strength of Sand-Reinforced Ice, 3

Fly-Ash Slurry Island: I. Theoretical and Experimental Investigations, 681

Fly-Ash Slurry Island: II. Construction in Hakucho Ohashi Project, 682

Guidelines for Design of Cable-Stayed Bridges, 1251

Indigenous Resource Utilization in Design of Advanced Lunar Facility, 31

Use of Scrap Tires in Road Construction, 123

Construction methods

Analysis of Stability of L'Ambiance Plaza Lift-Slab Towers, 721

Automation of Concrete Slab-on-Grade Construction, 134

Bored Tunneling for Singapore Metro, 112

Buckling of Suspended Cambered Girders, 784

Concept Evaluation Methodology for Extraterrestrial Habitats, 35

Critical Success Factors for Construction Projects, 95
Engineering a Monument, Evoking a Nightmare, 1130

Exchange Place Station Subsurface Reconstruction and Improvements, 100

Investigation of L'Ambiance Plaza Building Collapse, 720

Knowledge Acquisition and Development for Formwork Selection System, 101

L'Ambiance Plaza: What Have We Learned, 1127

Mechanical Equipment Requirements for Inflatable Lunar Structures, 32

Method Proposed for Construction of Multispan Cable-Stayed Bridges, 106

Modeling and Simulating Learning Development in Construction, 131

Roller Compacted Concrete III, 1268

Site-Level Construction Information System, 132

Construction planning

Construction of Pressurized, Self-Supporting Membrane Structure on Moon, 34

Design and Construction Considerations for Lunar Outpost, 33

SUBJECT INDEX

Contracts

Owner Involvement in Construction Projects in Saudi Arabia, 655

Path-Finder: AI-Based Path Planning System, 66

Schedule "Games" People Play, and Some Suggested "Remedies", 652

Construction site accidents

Expert System for Construction Safety. I: Fault-Tree Models, 722

Expert System for Construction Safety. II: Knowledge Base, 723

Role of Designers in Construction Worker Safety, 130

Construction sites

Resolving Contract Disputes Based on Differing-Site-Condition Clause, 136

Site-Level Construction Information System, 132

Consultants

The Evolution of an Environmental Monitor, 1170

Project Management Oversight—Good Tool for Program Managers, 659

Staffing Up for a Major Program, 1124

Consulting engineers

Capturing Capital, 1164

Contact pressure

Frictionless Contact with BEM Using Quadratic Programming, 266

Containers

Dynamic Response of Flexibly Supported Liquid-Storage Tanks, 771

Containment

Theory and Experiments on Subsurface Contaminant Sorption Systems, 326

Containment vessels

Evaluation of Collection-Well Parameters for DNAPL, 316

Contaminants

Electroosmotic Contaminant-Removal Processes, 311

Electroosmotic Removal of Gasoline Hydrocarbons and TCE From Clay, 310

Modeling of Soil Venting Processes to Remediate Unsaturated Soils, 314

Predicting Effluent PCBs From Superfund Site Dredged Material, 346

Removal of 1,2 Dibromo-3-Chloropropane by Countercurrent Cascade Air Stripping, 319

Theory and Experiments on Subsurface Contaminant Sorption Systems, 326

Contamination

Electrokinetic Cleanups, 1211

Microorganism Survival in Ice-Covered Marine Environment, 53

Phenol Removal from Kaolinite by Electrokinetics, 466

Continental shelves

Propagation of Long Waves Onto Shelf, 1080

Continuing education

Beyond Push-Button GPS, 1175

Delineating Theory for GPS Surveying, 960

Educational Needs of Civil Engineers in Management, 657

Portrait of a Manager, 1191

Continuous beams

Distortional Buckling Solutions for Continuous Composite Beams, 761

Elastic Analysis of Submarine Pipelines, 762

Continuous structures

Prestress Influence on Shear-Lag Effect in Continuous Box-Girder Bridge, 932

Continuum mechanics

Analysis of Welded Tubular Connections Using Continuum Damage Mechanics, 803

Boundary-Element Direct Reanalysis for Continuum Structures, 253

Elastic Buckling of Rectangular Plates with Curved Internal Supports, 841

Microplane Model for Cyclic Triaxial Behavior of Concrete, 234

Strain-Based Constitutive Model with Mixed Evolution Rules for Concrete, 223

Wave Attenuation in Viscoelastic Continuum with Fading Memory, 248

Contract administration

Quantitative Study of Contractor Evaluation Programs and Their Impact, 126

Resolving Contract Disputes Based on Misrepresentations, 118

Schedule "Games" People Play, and Some Suggested "Remedies", 652

Contract terms

Manholes and Microtunneling, 1228

Quantitative Study of Contractor Evaluation Programs and Their Impact, 126

Strategies in Risk Management of On-Demand Guarantees, 103

Contractors

Design Engineer/Contractor Bankruptcy: Considerations for Debtor and Creditors, 663

Heavy Construction Estimates, With and Without Computers, 122

Howdy, Partner, 1147

Overhead and Profit on Change Orders, 1193

Predicting Construction Contractor Failure prior to Contract Award, 138

Quantitative Study of Contractor Evaluation Programs and Their Impact, 126

R&D Cooperation by Swedish Contractors, 89

Risk Analysis Approach to Selection of Contractor Evaluation Method, 139

Underwriting Process for Construction Contract Bonds, 649

Contracts

Bidding Strategy: Winning over Key Competitors, 99
Critical Success Factors in Winning BOT Contracts, 102

Engineering Pre-engineered Buildings, 1199

Hypertext and Claim Analysis, 133

Multiparameter Bidding System—Innovation in Contract Administration, 98

Overhead and Profit on Change Orders, 1193

- Quantitative Study of Contractor Evaluation Programs and Their Impact, 126
- Resolving Construction Disputes by Mediation: Hong Kong Experience, 671
- Resolving Contract Disputes Based on Differing-Site-Condition Clause, 136
- Resolving Contract Disputes Based on Misrepresentations, 118
- Risk Reduction Through Indemnification Contract Clauses, 662
- Site Event Advisor: Expert System for Contract Claims, 86
- Underwriting Process for Construction Contract Bonds, 649

Control

- Automated Operation of Pumping Stations in Russia, 610
- Design/Control Optimization of Cross-Ply Laminates under Buckling and Vibration, 24
- Object-Oriented Programming in Robotics Research for Excavation, 80
- Restricting Rockfalls, 1214
- Yield Safety, Cracking Control, and Moment Redistribution, 781

Control structures

- Computation Method for Regulating Unsteady Flow in Open Channels, 619
- Restricting Rockfalls, 1214

Control systems

- Adaptive Control of Ground-Water Hydraulics, 1036
- Advanced Software Design and Standards for Traffic Signal Control, 995
- Aseismic Hybrid Control of Nonlinear and Hysteretic Structures I, 237
- Aseismic Hybrid Control of Nonlinear and Hysteretic Structures II, 238
- Control of Hysteretic System Using Velocity and Acceleration Feedbacks, 290
- Design of Control Algorithm for Operation of Irrigation Canals, 632
- Identification of Control System for Canal with Night Storage, 597
- Issues in Developing Control Zones for International Space Operations, 42
- Multireservoir Sewer-Network Control via Multivariable Feedback, 1071
- Simultaneous Design and Control of Stiffened Laminated Composite Structures, 23
- Study of Open-Channel Dynamics as Controlled Process, 479
- Urban Transit Guides Application of Advanced Train Control, 977
- Water-Level Control in Hydropower Plants, 151
- Wave-Motion Stability in Canals with Automatic Controllers, 565

Control theory

- Quasi-Three-Dimensional Optimization Model of Jakarta Basin, 1037
- State-Space Analysis and Control of Slow Transients in Pipes, 544

Convergence

- Dynamic Analysis of Elastoplastic Softening Discretized Structures, 297

Cooling systems

- Design Optimization of Passively Cooled Room, 141

Cooling towers

- Tolerance Limits for Geometric Imperfections in Hyperbolic Cooling Towers, 873

Cooling water

- Prediction Method for Local Scour by Warmed Cooling-Water Jets, 537
- Use of Density Current to Modify Thermal Structure of TVA Reservoirs, 506

Cooperation

- Future Concerns in Environmental Engineering Graduate Education, 752
- Government-Industry Cooperation: Fast-Track Concrete Innovation, 117
- Howdy, Partner, 1147
- Issues in Developing Control Zones for International Space Operations, 42

Coordination

- Noncontractual Methods of Integration on Construction Projects, 113
- Transaction-Management Issues in Collaborative Engineering, 65

Core

- High-Order Theory for Sandwich-Beam Behavior with Transversely Flexible Core, 214

Corporate planning

- Thoughts on Management of Acquisitions, 651
- Vertical Business Integration Strategies for Construction, 653

Corporations

- Thoughts on Management of Acquisitions, 651

Correlation analysis

- Monte Carlo Technique with Correlated Random Variables, 105
- Strength Correlation Factor for Residual Soils, 396

Correlation techniques

- Salinity of Rivers: Transfer Function-Noise Approach, 596

Corrosion

- Advancing Anchorage Technology, 1181
- Chloride Binding Capacity in Cement-Fly-Ash Pastes, 673
- Corrosion Cracking in Relation to Bar Diameter, Cover, and Concrete Quality, 696
- Microbiologically Induced Corrosion, 1161
- Rebar Corrosion in $MgSO_4$ Solution, 693
- Transportation of Demineralized Water: Case Study, 1005
- Water Penetration in Laterally Loaded Brick-Wall Panels, 703

Corrosion control

- Advancing Anchorage Technology, 1181
- Put to the Test, 1231
- Tunnel Takes Cathodic Protection, 1220

Corrosion resistance

- Safeguarding Steel, 1151
- Strength and Corrosion Resistance of Superplasticized Concretes, 680

Corrugating

Structural Evaluation of Box Culverts, 945

Cost analysis

Aesthetic Design Philosophy Utilized for California State Bridges, 1035

Consequential Equipment Costs Associated with Lack of Availability and Downtime, 13

Monte Carlo Technique with Correlated Random Variables, 105

Optimal Scheduling of Consecutive Landfill Operations with Recycling, 332

Pavement Performance and Life-Cycle Cost Analysis, 1

Cost control

Cost and Quality Management, 654

Landfills: Anatomy of Automated Design, 1141

Making Teamwork Work, 1137

Project Management: Keys to Success, 1153

Cost effectiveness

Building Better Bridges: Concrete Vs. Steel, 1182

Design-Basis Flood for Rehabilitation of Existing Dams, 486

Design-Build Goes Public, 1184

Peaches and Concrete, 1128

Cost estimates

Constructability for Drilled Shafts, 94

Construction Project Planning Process Model for Small-Medium Builders, 128

Cost savings

Model for Optimal Design of Reinforced Concrete Beam, 940

Value Engineering at a Superfund Site, 1143

Cost sharing

Equity and International Agreements for CO₂ Containment, 147

Costs

Cost Models for Preliminary Economic Evaluation of Sprinkler Irrigation Systems, 625

Landfills: Anatomy of Automated Design, 1141

Nitrate Risk Management under Uncertainty, 1045

Small Utility GIS, 1223

Value Engineering at a Superfund Site, 1143

Cotton

Relating Crop-Yield Response to Water-Table Fluctuations, 579

Coupled walls

Finite Element Model for Seismic RC Coupled Walls Having Slender Coupling Beams, 921

Court decisions

In Too Deep, 1233

Jury Verdict: Frequency versus Risk-Based Culvert Design, 1046

Resolving Contract Disputes Based on Differing-Site-Condition Clause, 136

Resolving Contract Disputes Based on Misrepresentations, 118

Risk Reduction Through Indemnification Contract Clauses, 662

Coverings

Better Cover-Ups, 1160

Landfill-Cover Conflict, 1234

Crack initiation

Cracking and Debonding on Bimaterial Interface under Uniform Loading, 219

Crack propagation

FEM Modeling of Fictitious Crack Propagation in Concrete, 179

Probability of Crack Growth in Poisson Field of Penny Cracks, 210

Stability Theory of Cohesive Crack Model, 189

Cracking

Analysis of Delamination of Post-Tensioned Silos, 814

Bond Anchorage of Pretensioned FRP Tendon at Force Release, 915

Corrosion Cracking in Relation to Bar Diameter, Cover, and Concrete Quality, 696

Cracking Response of RC Members Subjected to Uniaxial Tension, 824

Drying and Cracking Effects in Box-Girder Bridge Segment, 773

FEM Modeling of Fictitious Crack Propagation in Concrete, 179

Performance of Masonry Walls: Case Study in Kuwait, 678

Static Response of Prestressed Girders with Openings, 783

Steady-State and Multiple Cracking of Short Random Fiber Composites, 291

Yield Safety, Cracking Control, and Moment Redistribution, 781

Cracks

Crack Analysis of Reinforced Concrete Tension Members, 875

Dynamic Stiffness Analysis of Concrete Pavement Slabs, 1003

Flexural Analysis of Reinforced Concrete Beams Containing Steel Fibers, 914

Histogram-Based Approach for Automated Pavement-Crack Sensing, 1013

Postcrack Scaling Relations for Fiber Reinforced Cementitious Composites, 675

Probability of Crack Growth in Poisson Field of Penny Cracks, 210

Quantitative NDE Technique for Assessing Damages in Beam Structures, 240

Stability of Concrete Gravity Dams with Drained and Finite Cracks, 149

Theoretical Study of Crack-Induced Eigenfrequency Changes on Beam Structures, 177

Creativity

Reflection in Problem Solving and Design, 741

Creep

Airfield Pavement Creep Failure Investigation, 719

Analysis of Circular RC Columns for Short- and Long-Term Deformations, 793

Composite Beams with Partial Interaction under Sustained Loads, 862

Constitutive Model for Ice, 170

Creep

- Creep and Creep Rupture of Metallic Composites, 251
- Creep Behavior Model for Structural Lumber, 883
- Creep Effects in Composite Beams with Flexible Shear Connectors, 872
- Creep Recovery of Prepacked Aggregate Concrete, 695
- Drying and Cracking Effects in Box-Girder Bridge Segment, 773
- Generalized Creep and Stress Relaxation Model for Clays, 462
- Necking of Creep-Cavitating Bars, 199
- Reliability Analysis of Creep and Shrinkage Effects, 886
- Slender Reinforced Concrete Bridge Towers under Cyclic Lateral Load, 6
- Temperature-Independent Relationships for Frozen Soils, 50
- Critical flow**
- Critical Depth Relations for Flow Measurement Design, 616
- Critical load**
- Elastic Buckling of Incomplete Composite Plates, 154
- Theoretical Study of Stability Criteria for X-Bracing Systems, 233
- Crop production**
- Decision Support System for Crop Planning during Droughts, 588
- Irrigation and Drainage—Systems Policy Analysis and India Case Study, 1064
- Crop yield**
- High Frequency Basin Irrigation Design for Upland Crops in Rice Lands, 611
- Irrigation Timing for Wheat Based on Climate, Crop, and Soil Data, 598
- Relating Crop-Yield Response to Water-Table Fluctuations, 579
- Crops**
- Beginning of Motion for Selected Unanchored Residue Materials, 614
- Decision Support System for Crop Planning during Droughts, 588
- Design Optimization of Passively Cooled Room, 141
- Evapotranspiration and Irrigation Water Requirements, 2
- Irrigation Land Management Model, 637
- Irrigation Timing for Wheat Based on Climate, Crop, and Soil Data, 598
- Planning Simulation Model of Irrigation District, 576
- Stochastic Model for Soil Moisture Deficit in Irrigated Lands, 608
- Cross sections**
- Complete Biaxial Load-Deformation Behavior of RC Columns, 901
- Estimating Earthwork Volumes of Curved Roadways: Mathematical Model, 1021
- Crushing**
- Pressure of Crushed Ice as Mohr-Coulomb Material Against Flat, Axisymmetric Indenter, 58
- Culverts**
- Jury Verdict: Frequency versus Risk-Based Culvert Design, 1046

1992 ASCE TRANSACTIONS

- Structural Evaluation of Box Culverts, 945
- Curing**
- Chloride Binding Capacity in Cement-Fly-Ash Pastes, 673
- Effective Cohesion for Compacted Clay, 397
- Strength and Shrinkage of Natural Pozzolan Mortar in Hot Weather, 683
- Currents**
- Diversion Oil Booms in Current, 1114
- Effect of Static Offset on TLP Modeling, 158
- Laboratory Study of Oil Slick Subjected to Nearshore Circulation, 362
- Curricula**
- A Challenge for Research, 115
- Civil Engineering Capstone Design Course, 746
- Computing in Civil Engineering: Current Trends and Future Directions, 737
- Delineating Theory for GPS Surveying, 960
- Future Concerns in Environmental Engineering Graduate Education, 752
- Military Leaders and Civil Engineers—An Air Force Academy Challenge, 742
- Curtain walls**
- The Crown and the Curtain Wall, 1194
- Curvature**
- Buckling of Suspended Cambered Girders, 784
- Deflections of Beams with Varying Rectangular Cross Section, 282
- Estimating Earthwork Volumes of Curved Roadways: Mathematical Model, 1021
- Moving Hinge in Large-Displacement Problems, 263
- Solving Circular Curve Using Newton-Raphson's Method, 959
- Curved beams**
- Finite Element Analysis of Thin-Walled Curved Beams Made of Composites, 871
- Fixed-End Moments and Thrusts of Planar Curved Beams, 774
- Low-Order Interpolation Functions for Curved Beams, 174
- Curved profiles**
- Effect of Thickness Distribution on Performance of S-Cambered Profiles, 150
- Cyclic loads**
- Anisotropic Plasticity Model for Undrained Cyclic Behavior of Clays. I: Theory, 379
- Anisotropic Plasticity Model for Undrained Cyclic Behavior of Clays. II: Verification, 380
- Associative Plasticity for Dilatant Soils, 200
- Collapse Mode of Elastic-Plastic Structures, 217
- Cyclic Behavior of Extended End-Plate Joints, 833
- Density Changes During Undrained Loading—Membrane Compliance, 470
- Hierarchical Single-Surface Model for Static and Cyclic Behavior of Interfaces, 212
- Hysteretic Response of Reinforced-Concrete Infilled Frames, 876
- Inelastic Response of Variable Stiffness Members under Cyclic Loading, 236
- Microplane Model for Cyclic Triaxial Behavior of Concrete, 234

Mixed Hardening, Three-Invariants Dependent Cap Model, 191

Moduli and Damping Factors of Soft Marine Clays, 441

Nonlinear Cyclic Behavior of Reinforcing Bars Including Buckling, 943

Pile Capacity for Axial Cyclic Loadings, 370

Predicting Behavior of Cyclically Loaded RC Structures, 790

Reserve Capacity Design Method (RCDM) for Deep-water Piled Foundations, 1079

Residual Strength of Structural Components Subjected to Cyclic Loads, 903

Slender Reinforced Concrete Bridge Towers under Cyclic Lateral Load, 6

Strength of Concrete-Filled Thin-Walled Steel Box Columns: Experiment, 927

Cylinders

Buckling of Pressurized Axisymmetrically Imperfect Cylinders Under Axial Loads, 168

Time-Domain Second-Order Wave Diffraction in Three Dimensions, 1109

Wave Runup and Forces on Cylinders in Regular and Random Waves, 1116

Cylindrical shells

Response Variability of Structures Subjected to Bifurcation Buckling, 222

Stiffened Sheathings of Orthotropic Cylindrical Shells, 808

Dam design

Dams Going Safely over the Top, 1122

Embankment Dams—James L. Sherard Contributions, 1243

RCC at 10, 1207

Dam failure

Evaluating Spillway Adequacy, 1166

Dam safety

Design-Basis Flood for Rehabilitation of Existing Dams, 486

Dam stability

Seismic Assessment of Tailings Dams, 1232

Damage

Analysis of Welded Tubular Connections Using Continuum Damage Mechanics, 803

Constitutive Model for Ice, 170

Creep and Creep Rupture of Metallic Composites, 251

Damage of Concrete in Fatigue, 287

Damage to Two Apartment Buildings Due to Moisture Variation of Expansive Soil, 718

Irrigation, Drainage, and Landscaping for Expansive Soil, 592

Laboratory Testing of Ultimate Capacity of Dented Tubular Members, 818

Microplane Model for Cyclic Triaxial Behavior of Concrete, 234

Modeling Stiffness Degradation in Filamentary Composite Materials, 686

Strain-Based Constitutive Model with Mixed Evolution Rules for Concrete, 223

Swimming Pools Supported by Dissimilar Bearing Strata, 713

Damage accumulation

Hygrothermal Effects on Load-Duration Behavior of Structural Lumber, 815

Damage assessment

Building KBES for Diagnosing PC Pile With Inductive Learning, 71

Combined Symbolic-Numeric Explosion Damage Assessment for Structures, 83

Damage Diagnosis of Steel Frames Using Vibrational Signature Analysis, 271

Flexibility by Multireference Impact Testing for Bridge Diagnostics, 879

Photogrammetric Solution for Vehicle-Damage Investigation, 1022

Quantitative NDE Technique for Assessing Damages in Beam Structures, 240

Damage estimation

Performance Evaluation of Lake Shelbyville by Stochastic Dynamic Programming, 1047

Damages

Behavior of Partially Grout-Filled Damaged Tubular Members, 928

Damping

Control of Along-Wind Response of Structures by Mass and Liquid Dampers, 155

Destabilizing Effect of Magnetic Damping in Plate Strip, 163

Effect of Ambient Temperature on Viscoelastically Damped Structure, 867

Frequency Domain Analysis of Undamped Systems, 197

Frequency Domain Optimal Control of Wind-Excited Buildings, 303

Influence of ADAS Element Parameters on Building Seismic Response, 864

Seismic Design of Viscoelastic Dampers for Structural Applications, 835

Seismic-Energy Dissipation in MDOF Structures, 828

Structural Seismic Damper, 823

Torsional Radiation Damping of Arbitrarily Shaped Embedded Foundations, 428

Tuned Liquid Damper (TLD) for Suppressing Horizontal Motion of Structures, 275

Vibration Control of Beams with Embedded Smart Composite Material, 49

Dams

Dams Going Safely over the Top, 1122

Design-Basis Flood for Rehabilitation of Existing Dams, 486

Evaluating Spillway Adequacy, 1166

Innovative Reregulation Weirs, 1163

Mathematical Model for Piping, 415

RCC at 10, 1207

Seismic Assessment of Tailings Dams, 1232

Steady-State Strength Analysis of Lower San Fernando Dam Slide, 387

Tackling Trapped Sediments, 1134

Undrained Shear Strength of Liquefied Sands for Stability Analysis, 460

Dams, arch

- Effect of Contraction Joints on Earthquake Response of Arch Dam, 816
- Shape Optimization of Arch Dams for Static and Dynamic Loads, 925

Dams, concrete

- Ambient Temperature Effect in Concrete Dam Foundation Seepage, 368
- Effect of Contraction Joints on Earthquake Response of Arch Dam, 816
- RCC at 10, 1207
- Roller Compacted Concrete III, 1268

Dams, earth

- Analysis of Behavior of Earth Dam Using Strong-Motion Earthquake Records, 381
- Compaction Quality Control in Granular Shell of Earth Dam, 433
- Three-Dimensional Seismic Analysis of La Villita Dam, 471

Dams, embankment

- Embankment Dams—James L. Sherard Contributions, 1243
- Field Performance and Analysis of Steep Riprap, 445

Dams, gravity

- Stability of Concrete Gravity Dams with Drained and Finite Cracks, 149

Dams, rockfill

- Embankment Dams—James L. Sherard Contributions, 1243
- Three-Dimensional Seismic Analysis of La Villita Dam, 471

Darcy's law

- Conversion Between Quadratic and Power Law for Non-Darcy Flow, 513

Data analysis

- Engineering Analysis of Extreme Value Data: Selection of Models, 1086
- Optimizing Launch-on-Time Probability, 41
- Recorded Seismic Response of Pacific Park Plaza. II: System Identification, 846
- Statistical Properties of Construction Duration Data, 121
- Stochastic Time-Series Representation of Wave Data, 1100

Data collection

- Automated Construction Field-Data Management System, 1001
- CAD and the Corps, 1169
- Ecuador's Rural Cadasters and Land Titling Project (CATIR): Technical Process, 966
- GPS/Positioned Digital Video for Airborne GIS Data Acquisition, 963
- Research Needs Related to Forensic Engineering of Constructed Facilities, 704
- Site-Level Construction Information System, 132
- Taming Environmental Data, 1192

Data communication

- Primitive-Composite Approach for Structural Data Modeling, 61
- Transaction-Management Issues in Collaborative Engineering, 65

Data handling

- Construction Applications of Relational Data Bases in Three-Dimensional GIS, 64
- NIAM Conceptual Data-Base Design in Construction Management, 62

Data processing

- Object-Oriented Finite Element and Graphics Data-Translation Facility, 77

Data systems

- The Connecticut Photolog Laser Videodisc-Based Pavement Rating System, 983
- Integrated Data-Base Systems, 92
- Primitive-Composite Approach for Structural Data Modeling, 61
- Representing Building Product Information Using Hypermedia, 60

Database management systems

- Aspects of Virtual Master Builder, 745
- Automated Construction Field-Data Management System, 1001
- Comparing Object-Oriented and Relational Data Models for Project Control, 79
- Cranes, Concrete, Construction...and Computers, 1167
- Integrated Data-Base Systems, 92
- Integrated Pavement Management System for Kennedy International Airport, 1011
- Integrating Facility Delivery through Spatial Information, 1025
- Object-Oriented Approaches for Integrated Engineering Design Systems, 74
- PMSC: Pavement Management System for Small Communities, 984
- Taming Environmental Data, 1192
- Water's New World, 1168

Databases

- CAD and the Corps, 1169
- Comparing Object-Oriented and Relational Data Models for Project Control, 79
- Construction Applications of Relational Data Bases in Three-Dimensional GIS, 64
- GIS: New York's Pipe Dream, 1136
- Linking Data Bases to Hydraulic Computations, 63
- NIAM Conceptual Data-Base Design in Construction Management, 62
- Primitive-Composite Approach for Structural Data Modeling, 61
- Restricting Rockfalls, 1214
- Transaction-Management Issues in Collaborative Engineering, 65

Dead loads

- Effects of Dead Loads in Dynamic Plates, 759
- Simplified Building Analysis with Sequential Dead Loads—CFM, 809

Debris

- Bridge Pier Scour with Debris Accumulation, 545
- Routing Debris Flows with Particle Segregation, 558
- Trash Rack Blockage in Supercritical Flow, 570
- Tying Back a Landslide, 1225

Decay

- Integrated Physical Model for Cylindrical Shells, 878

SUBJECT INDEX

Demand

Microorganism Survival in Ice-Covered Marine Environment, 53

Shoaling and Decay of Two Wave Trains on Beach, 1110

Decision making

Dealing with Uncertainty: From Health-Risk Assessment to Environmental Decision Making, 144

Decision Support System for Crop Planning during Droughts, 588

Improved First-Order Uncertainty Method for Water-Quality Modeling, 354

Planning and Management of Water-Resource Systems in Developing Countries, 1072

Predicting Construction Contractor Failure prior to Contract Award, 138

Rationalizing Water Requirements with Aid of Fuzzy Allocation Model, 1055

Risk-Based Decision Making in Water Resources V, 1266

Selection of Design/Build Proposal Using Fuzzy-Logic System, 108

Systems Analysis in Water-Distribution Network Design: From Theory to Practice, 1050

Using Expert Systems to Manage Professional Survey Practices, 961

Water-Quality Modeling for Decision Making, 1054

Decision support systems

Cost Models for Preliminary Economic Evaluation of Sprinkler Irrigation Systems, 625

Site-Level Construction Information System, 132

Decomposition

Data Abstraction in Engineering Software Development, 76

Deep foundations

Efficiency Formula for Pile Groups, 382

Stresses Induced by Surficial and Deep Loading in Elastic Medium, 432

Defects

Defects in Aluminum Windows and Impact on Dust and Air Infiltration, 705

Manufactured Wood Joists—Noncollapse Failure, 709

Deflection

Analysis of Thick Circular Plates Undergoing Large Deflections, 25

Approximating Lateral Stiffness of Stories in Elastic Frames, 770

Asymptotic Analysis of TLP Tendons and Risers, 157

Axisymmetric General Shells and Jointed Shells of Revolution, 937

Creep Effects in Composite Beams with Flexible Shear Connectors, 872

Deflections of Beams with Varying Rectangular Cross Section, 282

Energy Equation for Beam Lateral Buckling, 840

Howe Truss Behavior Interpreted by Deflections, 716

Hypar Shell on Pasternak Foundation, 230

Prevention of Stress Relaxation in Viscoelastic Structures, 860

Residual Deformation Analysis for Inelastic Bridge Rating, 842

Response of Plates of Arbitrary Shape Subject to Static Loading, 260

Straight, Single-Tapered Composite I-Beams of Orthotropic Materials, 701

Deformation

Bolted Connections in Wood under Bending/Tension Loading, 813

Complete Biaxial Load-Deformation Behavior of RC Columns, 901

Composite Beams with Partial Interaction under Sustained Loads, 862

Creep and Creep Rupture of Metallic Composites, 251

Deformational Behavior of Fiber-Reinforced Concrete Beams in Bending, 906

Elastoplastic Deformation for Particulates with Frictional Contacts, 254

Energy Dissipation in Determinate Steel Beams, 757

Energy Dissipation in Indeterminate Steel Beams, 758

Free Boundary, Fluid Flow, and Seepage Forces in Excavations, 375

Measurement of Deformations in Buried Pipeline, 957

Necking of Creep-Cavitating Bars, 199

Prebuckling Deflections and Lateral Buckling. I: Theory, 922

Prebuckling Deflections and Lateral Buckling. II: Applications, 923

Prevention of Stress Relaxation in Viscoelastic Structures, 860

Reinforcement Anchorage Slip under Monotonic Loading, 892

Simple Cord Composites, 270

Stiffness Expressions for Element with Central and End Springs, 810

Use of Engineering Strain and Trefftz Theory in Buckling of Columns, 283

Deformation analysis

Residual Deformation Analysis for Inelastic Bridge Rating, 842

Degradation

Aggradation-Degradation Process in Alluvial Channels, 567

Degradation failures

Modeling Stiffness Degradation in Filamentary Composite Materials, 686

Delaminating

Analysis of Delamination of Post-Tensioned Silos, 814

Delay time

Optimizing Launch-on-Time Probability, 41

Planning for Movement of Very Large, Slow-Moving Vehicles, 992

Time-Delay Effect on Dynamic Response of Actively Controlled Structures, 46

Delphi method

Design-Basis Flood for Rehabilitation of Existing Dams, 486

Demand

Engineering-Econometric Model of Energy Demand, 146

Demolition

Demolition

Out with the Old, 1197

Denitrification

Modeling and Pilot-Scale Experimental Verification for Predenitrification Process, 308

Operational Strategies for Predenitrification Process, 309

Densification

Airfield Pavement Creep Failure Investigation, 719

Dynamic Compaction Analysis, 425

Dynamic Compaction of Nuclear Waste, 1144

A Monumental Task, 1171

Postdensification Penetration Resistance of Clean Sands, 12

Time-Dependent Cone Penetration Resistance Due to Blasting, 429

Density

Density Changes During Undrained Loading—Membrane Compliance, 470

Estimating Thaw-Strain Settlement of Frozen Fill, 59

Improvement of Flow in Final Settling Tanks, 325

Density currents

Density Currents and Shear-Induced Flocculation in Sedimentation Tanks, 517

Density Currents Entering Lakes and Reservoirs, 557

Influences of Density on Circular Clarifiers with Baffles, 357

Reservoir Sedimentation. II: Reservoir Desilting and Long-Term Storage Capacity, 491

Use of Density Current to Modify Thermal Structure of TVA Reservoirs, 506

Density stratification

Density Currents Entering Lakes and Reservoirs, 557

Modeling of Rectangular Settling Tanks, 552

Deposition

Depositions and Trial Testimony, A Positive Experience?, 735

Depth

Deflections of Beams with Varying Rectangular Cross Section, 282

Desalination

The Desalination Situation, 1188

Transportation of Demineralized Water: Case Study, 1005

Desalination plants

The Desalination Situation, 1188

Desiccation

Modeling Desiccating Behavior of Mine Tailings, 393

Design

Advancing Anchorage Technology, 1181

Axial and Free-Bending Analysis of Spiral Strands Made Simple, 296

Bracing Requirements of Plane Frames, 844

Bridge Pier Scour with Debris Accumulation, 545

Causes of Quality Deviations in Design and Construction, 91

Civil Engineering Capstone Design Course, 746

Coastal Engineering Practice '92, 1237

1992 ASCE TRANSACTIONS

Column Design in Steel Frames under Gravity Loads, 920

Constant Hole-Spacing Trail Tubes, 583

Controlling Pulsed Incompressible Flow, 140

Cost and Quality Management, 654

Critical Depth Relations for Flow Measurement Design, 616

Design and Construction Considerations for Lunar Outpost, 33

Design and Operation of On-Farm Irrigation Ponds, 618

Design Charts for Timber Beam-Columns, 789

Design Considerations for Using Adhesives in Shear Walls, 956

Design Implications of Measured Pressures and Strains in Silos, 909

Design Method for Frozen-Soil Retaining Wall, 54

Design of Latticed Steel Transmission Structures (ANSI/ASCE 10-90), 1240

Design of Municipal Wastewater Treatment Plants, 1241

Design of Notched Wood Beams, 891

Design of RC Sections with Generic Shape under Biaxial Bending, 822

Design of Trapezoidal Expansive Transitions, 575

Design Procedures for Effluent Discharge to Estuaries During Ebb Tide, 327

Design-Build Goes Public, 1184

Designing Articulated Vehicles for Low-Speed Maneuverability, 1014

Designing Reinforced Rock, 1125

Durability of Stone for Rubble Mound Breakwaters, 1242

Effect of Strain Rate on Cold-Formed Steel Stub Columns, 935

Flexural Tensile Strength of Partially Grouted Concrete Masonry, 950

Flow and Energy Dissipation Over Stepped Gabion Weirs, 507

Inelastic Amplification Factor for Design of Steel Beam-Columns, 859

Influence of ADAS Element Parameters on Building Seismic Response, 864

Local Scour at Bridge Abutments, 504

Minimum Weight Design of Structural Topologies, 856

Mix Design for Flowable Fly-Ash Backfill Material, 690

Modeling Desiccating Behavior of Mine Tailings, 393

Moisture Content and Reliability-Based Design for Wood Members, 955

OCEA, American-Style, 1180

Offshore Challenge, 1208

Owner Involvement in Construction Projects in Saudi Arabia, 655

Pilot Waste-Stabilization Pond in Tanzania, 323

Preliminary Design for NATM Tunnel Support in Soil, 394

Prying and Shear in End-Plate Connection Design, 831

Re-examination of Ylinen and Other Column Equations, 908

Reflection in Problem Solving and Design, 741

Reliability of Bolted Wood Connections, 949

SUBJECT INDEX

Diaphragms

Reliability-Based Pier Scour Engineering, 549
 Reserve Capacity Design Method (RCDM) for Deep-water Piled Foundations, 1079
 Residual Strength of Structural Components Subjected to Cyclic Loads, 903
 Role of Designers in Construction Worker Safety, 130
 Roller Compacted Concrete III, 1268
 Second-Order Inelastic Analysis Methods for Steel-Frame Design, 779
 Seismic Performance of Low-Rise Steel Perimeter Frames, 7
 Stability Analysis of Reinforced Embankments on Soft Soils, 474
 Stability and Performance of Slopes and Embankments II, 1270
 Static Response of Prestressed Girders with Openings, 783
 Statistical Analysis of Formulas for Breakwater Armor Layer Design, 1093
 Storm-Water Detention Storage Design under Random Pollutant Loading, 1065
 Strength of Concrete-Filled Thin-Walled Steel Box Columns: Experiment, 927
 Tests of Cold-Formed Channels with Local and Distortional Buckling, 857
 Tolerance Limits for Geometric Imperfections in Hyperbolic Cooling Towers, 873
 Wastewater under Home Plate, 1212
 Wave Front Behavior in Adsorption Reactors, 339
 Weldment Design for RHS Truss Connections. I: Applications, 912
 Wind Loads on Buildings with Sawtooth Roofs, 780
 Wind-Induced Response of Structurally Asymmetric High-Rise Buildings, 768

Design criteria
 Alluvial Canals Adequacy, 609
 ASCE LRFD Method for Stainless Steel Structures, 817
 Behavior of Concrete Hollow-Block Masonry Prisms under Axial Compression, 855
 Benefit-Cost Ratios: Failures and Alternatives, 1042
 Commentary on Proposed Specification for Structural Steel Beams with Web Openings (with Design Example), 947
 Comments on L'Ambiance Plaza Lifting Collar/Shearheads, 710
 Design Live Loads for Coherent Crowd Harmonic Movements, 821
 Design of Socketed Drilled Shafts in Limestone, 455
 Diversion Oil Booms in Current, 1114
 Engineering Pre-engineered Buildings, 1199
 Evaluation of Impact Factors for Horizontally Curved Steel Box Bridges, 938
 Fluctuating Uplift and Lining Design in Spillway Stilling Basins, 502
 Jury Verdict: Frequency versus Risk-Based Culvert Design, 1046
 New Stability Equation for Columns in Braced Frames, 861
 Out-of-Plane Strengths of Steel Beams, 868
 Proposed Specification for Structural Steel Beams with Web Openings, 946
 Schifferized Angle Struts, 865

Strength of Lag-Screw Connections, 916
 Technical Issues for Lunar Base Structures, 27
 Ultimate Loads of Continuous Composite Bridges, 902
 Uncertainty and Reliability Analysis of Jacket Platform, 907
 Wood Connections with Heavy Bolts and Steel Plates, 4

Design events
 Storm Runoff Detention for Pollutant Removal, 329

Design improvements
 Use of Mathematical Programming Methods for Complex Systems, 1053

Design modifications
 Causes of Quality Deviations in Design and Construction, 91

Design standards
 Object-Oriented Model of Engineering Design Standards, 78

Detention basins
 Storm Runoff Detention for Pollutant Removal, 329
 Storm-Water Detention Storage Design under Random Pollutant Loading, 1065

Detention reservoirs
 Preliminary Sizing of Detention Reservoirs to Reduce Peak Discharges, 561

Deterioration
 Learning to Love NDT, 1121
 Modeling Bridge Deterioration with Markov Chains, 1020
 Principles of Holistic Medicine Applied to Infrastructure Maintenance: A Test Case, 1126

Developing countries
 Critical Success Factors in Winning BOT Contracts, 102
 Method for Preevaluation and Selection of Road Projects in Gabon, 978
 Moisture and Suction in Sanitary Landfills in Semiarid Areas, 359
 Planning and Management of Water-Resource Systems in Developing Countries, 1072
 Planning Water Supply and Sanitation Projects in Developing Countries, 1058

Development
 Impact Fees: Practical Guide for Calculation and Implementation, 1032
 Object-Oriented Finite Element and Graphics Data-Translation Facility, 77
 Object-Oriented Programming in Robotics Research for Excavation, 80

Dewatering
 Conditioning and Dewatering of Anaerobically Digested BPR Sludge, 345
 Synchrotron Radiation Measurements of Degree of Saturation in Porous Matrix, 257

Diaphragms
 Dynamics of Buildings with V-Shaped Plan, 218
 Ultimate Loads of Continuous Composite Bridges, 902

Diesel fuels

Diesel as Case of Consumer Choice in Alternative Transport Fuels, 145

Differential equations

Deflections of Beams with Varying Rectangular Cross Section, 282

Explicit Equations of Motion of Discrete System of Disks in Two Dimensions, 264

Study of Open-Channel Dynamics as Controlled Process, 479

Differential settlement

Settling Down Easy, 1235

Swimming Pools Supported by Dissimilar Bearing Strata, 713

Diffraction

Three-Dimensional Scattering of Solitary Waves by Vertical Cylinder, 1112

Diffusers

Numerical and Physical Modeling of Air Diffuser Plume, 321

Diffusion coefficient

Estimation of Chloride Diffusion Coefficient and Tortuosity Factor for Mudstone, 420

Vertical Distribution of Suspended Sediment in Uniform Open-Channel Flow, 522

Dilatancy

Associative Plasticity for Dilatant Soils, 200

Dimensional analysis

Analysis and Design of Doweled Slab-on-Grade Pavement Systems, 1016

Cohesionless Fine-Sediment Bed Forms in Shallow Flows, 510

Dimensional Analysis of Buckling of Stiffened Composite Shells, 187

Softening and Snap-Through Behavior of Reinforced Elements, 246

Disasters

The Great Chicago Flood of 1992, 1218

Discharge

Automated Operation of Pumping Stations in Russia, 610

Calculating Flow in Manifold and Orifice System, 342

Discharge Capacity for Curb-Opening Inlets, 529

Flow Measurement with Rectangular Free Overfall, 639

Side Weir in Triangular Channel, 640

Stage-Discharge Relationship in Tidal Rivers, 1088

Discharge coefficients

Momentum Model of Flow Past Weir, 644

Discrete elements

Computational Laboratory for Discrete Element Geomechanics, 67

Cone Models for Homogeneous Soil. I, 400

Discrete Element Method for Slope Stability Analysis, 468

Discrete Optimization of Structures Using Genetic Algorithms, 827

Modeling Monsoon-Affected Rainfall of Pakistan by Point Processes, 1076

Plane Frame Optimum Design Environment Based on Genetic Algorithm, 931

Disinfection

Evaluation of Ozone Disinfection Systems: Characteristic Time T , 322

Evaluation of Ozone Disinfection Systems: Characteristic Concentration C , 336

Dispersion

Longitudinal Dispersion Coefficients in Estuary, 508

Mixing, Dispersion, and Resuspension in Vicinity of Ocean Wastewater Plume, 478

Displacement

Antiplane Problems of Monoclinic Material, 259

Bending of Thin Plate with Three-Point Support, 838

Damage to Two Apartment Buildings Due to Moisture Variation of Expansive Soil, 718

Moving Hinge in Large-Displacement Problems, 263

New Spline Finite Element for Plate Bending, 216

Pipeline Response to Pile Driving and Adjacent Excavation, 383

Seismic Passive Resistance of Tied-Back Walls, 418

Simple Rigid Plastic Model for Seismic Tilting of Rigid Walls, 782

Timoshenko Beam Element Resting on Two-Parameter Elastic Foundation, 171

Displacements

Family of Iterative Shear-Deformation Theories for Shallow Shells, 286

Dissipation

Characteristic Dissipative Galerkin Scheme for Open-Channel Flow, 489

Dissolved oxygen

Improved First-Order Uncertainty Method for Water-Quality Modeling, 354

Distortion

Distortional Buckling Solutions for Continuous Composite Beams, 761

Distributed processing

Coarse-Grain Parallel Computing Using ISIS Tool Kit, 73

Computing in Civil Engineering and Geographic Information Systems Symposium, 1239

Distribution

Information Theory in Risk Analysis, 561

Mean Size Distribution of Bed Load on Goodwin Creek, 556

Diversion structures

Diversion Oil Booms in Current, 1114

Domes, structural

Classical Buckling Load of Spherical Domes Under Uniform Pressure, 243

Force Deformation Equations for Initially Curved Laterally Loaded Beam Columns, 229

Mechanical Equipment Requirements for Inflatable Lunar Structures, 32

Doppler systems

Measured Internal Kinematics for Shoaling Waves with Theoretical Comparisons, 1098

Velocity Profiles in Steep Open-Channel Flows, 480

SUBJECT INDEX

Dynamic analysis

Dowels

- Analysis and Design Models for Structural Concrete Bridge Deck Overlays, 8
- Analysis and Design of Doweled Slab-on-Grade Pavement Systems, 1016
- Horizontal Load Transfer in Structural Concrete Bridge Deck Overlays, 9
- Mining for Building Expansion, 1227

Downtime

- Consequential Equipment Costs Associated with Lack of Availability and Downtime, 13

Drag

- Bed-Load Transport on Transverse Slope, 1, 499

Drainage

- Adaptation of Horton and SCS Infiltration Equations to Complex Storms, 591
- Discharge Capacity for Curb-Opening Inlets, 529
- Drainage Efficiency of Sand Layer in Layered Clay-Sand Reclamation, 378
- Drawdown Solutions with Variable Drainable Porosity, 599
- Effects of Drainage and Water-Management Practices on Hydrology, 628
- Hydrologic Model for Drained Forest Watershed, 589
- Including Uncertainty of Hydraulic Conductivity into Drainage Design, 624
- Irrigation and Drainage: Saving a Threatened Resource—In Search of Solutions, 1257
- Irrigation and Drainage—Systems Policy Analysis and India Case Study, 1064
- Irrigation, Drainage, and Landscaping for Expansive Soil, 592
- Jury Verdict: Frequency versus Risk-Based Culvert Design, 1046
- Probabilistic Design of Open Drainage Channels, 633
- Relating Crop-Yield Response to Water-Table Fluctuations, 579
- Reuse Simulation in Irrigated River Basin, 631
- Stability of Concrete Gravity Dams with Drained and Finite Cracks, 149

Drains

- Drawdown Solutions with Variable Drainable Porosity, 599

Drawdown

- Drawdowns for Nonleaky Aquifer Flow with Storage in Finite-Width Sink, 617

Dredges

- Predicting Effluent PCBs From Superfund Site Dredged Material, 346

Dredging

- Hydraulic Engineering: Saving a Threatened Resource—In Search of Solutions, 1255
- Ports '92, 1263
- Submarine Flow Slide in Puget Sound, 452

Drift

- Instability of Buildings Subjected to Earthquakes, 882
- Positive Drift of a Backward-Bent Duct Barge, 1084

Drilled shafts

- Constructability for Drilled Shafts, 94
- Design of Socketed Drilled Shafts in Limestone, 455

Driven piles

- Driving Characteristics of Open-Toe Piles in Dense Sand, 372
- Minipile Milestone in Memphis, 1196
- Soil Plug Response in Open-Ended Pipe Piles, 404
- Driver behavior**
- Exact Minimum Sight Distance on Sag Curve with Centered Overpass, 1006
- Identification of Inappropriate Driving Behaviors, 985
- Quantification of Agency and User Values of Pavement Performance, 973

Drop structures

- Analysis of ARS Low-Drop Grade-Control Structure, 554

Droughts

- Decision Support System for Crop Planning during Droughts, 588
- Stochastic Model for Soil Moisture Deficit in Irrigated Lands, 608

Drug addiction

- Efficacy of Drug Testing Programs Implemented by Contractors, 137

Ductility

- Analytical Moment-Curvature Relations for Tied Concrete Columns, 785
- Cyclic Behavior of Extended End-Plate Joints, 833
- Experimental Performance of Long Links in Eccentrically Braced Frames, 929
- Strength and Ductility of Confined Concrete, 847
- Strength of Concrete-Filled Thin-Walled Steel Box Columns: Experiment, 927

Dunes

- Development of Bed Features, 5

Dust

- Defects in Aluminum Windows and Impact on Dust and Air Infiltration, 705

Dyes

- Measuring Ozone by Indigo Method: Interference of Suspended Material, 367

Dynamic analysis

- Dynamic Analysis of Rigid Airport Pavements with Discontinuities, 989
- Dynamic Response of Multigirder Bridges, 881
- Dynamic Stiffness Analysis of Concrete Pavement Slabs, 1003
- Dynamics of Saturated Rocks. IV: Column and Borehole Problems, 261
- Free Vibration Analysis of Curved Thin-Walled Girder Bridges, 918
- Impact Analysis of Continuous Multigirder Bridges due to Moving Vehicles, 953
- Inelastic Response of Variable Stiffness Members under Cyclic Loading, 236
- Modal Synthesis Method for General Dynamic Systems, 241
- Response of Systems with Uncertain Parameters to Stochastic Excitation, 213
- Seismic Response of R/C Frames with Irregular Profiles, 786

Wind-Induced Response of Structurally Asymmetric High-Rise Buildings, 768

Dynamic loads

Design Live Loads for Coherent Crowd Harmonic Movements, 821

Dynamic Response of Multigirder Bridges, 881

Dynamic Stresses in Granular Assemblies with Microstructural Defects, 165

Evaluation of Flowable Fly-Ash Backfill. II: Dynamic Loading, 390

Impact Analysis of Continuous Multigirder Bridges due to Moving Vehicles, 953

Nonlinear Soil-Pile Interaction Model for Dynamic Lateral Motion, 373

Piles Under Dynamic Loads, 1262

Seismic Response of Multianchored Retaining Walls, 463

Shape Optimization of Arch Dams for Static and Dynamic Loads, 925

Time Domain Analysis of Dynamically Loaded Single Piles, 162

Dynamic models

Gas Phase Control for Oxygen-Activated Sludge, 330

Dynamic programming

Aggregation-Disaggregation Approach to Multireservoir Operation, 1063

Optimization and Simulation of Multiple Reservoir Systems, 1040

Optimization of Real-Time Hydrothermal System Operation, 1074

Performance Evaluation of Lake Shelbyville by Stochastic Dynamic Programming, 1047

Dynamic response

Asymptotic Analysis of TLP Tendons and Risers, 157

Cable-Stayed Bridge Vibration Due to Road Surface Roughness, 834

Cone Models for Soil Layer on Rigid Rock. II, 401

Ductility and Detailing Requirements of Bearing Wall Buildings, 849

Dynamic Behavior of Nonlinear Cable System. I, 206

Dynamic Behavior of Nonlinear Cable System. II, 207

Dynamic Response Analysis of Reinforced-Soil Retaining Wall, 426

Dynamic Response of Beams on Elastic Foundation, 805

Effect of Contraction Joints on Earthquake Response of Arch Dam, 816

Effect of Static Offset on TLP Modeling, 158

Effects of Dead Loads in Dynamic Plates, 759

Influence of ADAS Element Parameters on Building Seismic Response, 864

Instability of Buildings Subjected to Earthquakes, 882

Low-Order Interpolation Functions for Curved Beams, 174

Modal and Wave Load Identification by ARMA Calibration, 228

Modal Identification Algorithm with Unmeasured Input, 45

Nonlinear Soil-Pile Interaction Model for Dynamic Lateral Motion, 373

Nonstationary Response of Structures with Closely Spaced Frequencies, 235

Parametric Study of Seismic Soil-Tank Interaction. I: Horizontal Excitation, 800

Parametric Study of Seismic Soil-Tank Interaction. II: Vertical Excitation, 801

Performance of Viaduct Girders under Static and Dynamic Loads, 711

Pile Capacity for Axial Cyclic Loadings, 370

Pipeline Response to Pile Driving and Adjacent Excavation, 383

Rate Effects in Uniaxial Dynamic Compression of Concrete, 160

Rocking Impedance of Embedded Strip Foundations in Layered Soil, 407

Seismic Analysis Design of Frames with Viscoelastic Connections, 894

Seismic Passive Resistance of Tied-Back Walls, 418

Seismic Performance of Low-Rise Steel Perimeter Frames, 7

Time-Delay Effect on Dynamic Response of Actively Controlled Structures, 46

Tuned Liquid Damper (TLD) for Suppressing Horizontal Motion of Structures, 275

Dynamic stress measurement

Dynamic Stresses in Granular Assemblies with Microstructural Defects, 165

Dynamic structural analysis

Analytical Solutions for Thick, Doubly Curved, Laminated Shells, 232

Dynamic tests

Elastic Wood Properties from Dynamic Tests and Computer Modeling, 905

Dynamics

Bed-Load Transport on Transverse Slope. I, 499

Dynamic Analysis of Elastoplastic Softening Discretized Structures, 297

Dynamic Elastic-Plastic Buckling Behavior Illustrated by Simple Model, 274

Dynamic Experiments on Two Pile Groups, 395

Dynamic Interface Shear Strength Properties of Geomembranes and Geotextiles, 405

Dynamic Response of Flexibly Supported Liquid-Storage Tanks, 771

Dynamics of Buildings with V-Shaped Plan, 218

Effect of Strain Rate on Cold-Formed Steel Stub Columns, 935

Effect of Strain Rate on Material Properties of Sheet Steels, 934

Engineering Mechanics, 1245

Estimating Extreme Values of Run-Up on Beaches, 1094

Evaluation of Impact Factors for Horizontally Curved Steel Box Bridges, 938

Explicit Equations of Motion of Discrete System of Disks in Two Dimensions, 264

Interactive Base-Isolation Foundation System: II. Parametric Study, 278

Nonlinear Impulsive Motions of Low-Tension Cables, 202

Study of Open-Channel Dynamics as Controlled Process, 479

SUBJECT INDEX

Earthquakes

Earth fills

- Evaluation of Flowable Fly-Ash Backfill. I: Static Loading, 389
- Evaluation of Flowable Fly-Ash Backfill. II: Dynamic Loading, 390
- Inverse Analysis of Geotechnical Parameters on Improved Soft Bangkok Clay, 419

Earth pressure

- Effects of K_0 and Overconsolidation on Uplift Capacity, 446
- Fly-Ash Slurry Island: II. Construction in Hakucho Ohashi Project, 682
- Retaining Wall With Reinforced Cohesionless Backfill, 467
- Seismic Passive Resistance of Tied-Back Walls, 418
- Total Stress Analysis of Cantilever Sheetpiling in Layered Clay, 422
- Yielding of Mexico City Clay and Other Natural Clays, 417

Earth reinforcement

- Biotechnical Stabilization of Highway Cut Slope, 443
- Dynamic Response Analysis of Reinforced-Soil Retaining Wall, 426
- Gabions and Geogrids, 1201

Earthmoving

- Expert System for Equipment Selection for Earth-Moving Operations, 109

Earthquake damage

- Computed Versus Observed Seismic Response and Damage of Masonry Buildings, 858
- Earthquakes: A New Look at Cracked Masonry, 1219

Earthquake engineering

- Dynamic Interface Shear Strength Properties of Geomembranes and Geotextiles, 405
- Dynamics of Buildings with V-Shaped Plan, 218
- Effect of Contraction Joints on Earthquake Response of Arch Dam, 816
- Frequency Domain Analysis of Undamped Systems, 197
- Lessons Not Learned from 1989 Loma Prieta Earthquake, 736
- Lifeline Earthquake Engineering in the Central and Eastern U.S., 1259
- Seismic Analysis Design of Frames with Viscoelastic Connections, 894
- Seismic Design of Viscoelastic Dampers for Structural Applications, 835
- Seismic Performance of Fixed-Base and Base-Isolated Steel Frames, 208
- Seismically Safe, Spectator-Friendly, 1131

Earthquake excitation

- Nonstationary Response of Structures with Closely Spaced Frequencies, 235
- Parametric Study of Seismic Soil-Tank Interaction. I: Horizontal Excitation, 800
- Parametric Study of Seismic Soil-Tank Interaction. II: Vertical Excitation, 801
- Random Vibration under Propagating Excitation: Closed-Form Solutions, 188

Earthquake loads

- Piles Under Dynamic Loads, 1262

Earthquake resistant structures

- Control of Hysteretic System Using Velocity and Acceleration Feedbacks, 290
- Experimental Performance of Long Links in Eccentrically Braced Frames, 929
- Hysteretic Response of Reinforced-Concrete Infilled Frames, 876
- Seattle Plays It Safe, 1187
- Seismic Design of Viscoelastic Dampers for Structural Applications, 835
- Seismic Performance of Fixed-Base and Base-Isolated Steel Frames, 208
- Seismic Performance of Low-Rise Steel Perimeter Frames, 7
- Seismically Safe, Spectator-Friendly, 1131
- Stable Controllers for Instantaneous Optimal Control, 249

Earthquakes

- Analysis of Behavior of Earth Dam Using Strong-Motion Earthquake Records, 381
- Aseismic Hybrid Control of Nonlinear and Hysteretic Structures I, 237
- Aseismic Hybrid Control of Nonlinear and Hysteretic Structures II, 238
- Design Considerations for Using Adhesives in Shear Walls, 956
- Development of Design Spectra for Actively Controlled Wall-Frame Buildings, 224
- Effectiveness of Seismic Strengthening Techniques for Masonry Buildings, 863
- Experimental Study of Sliding Isolated Structures with Uplift Restraint, 851
- Finite Element Model for Seismic RC Coupled Walls Having Slender Coupling Beams, 921
- Influence of ADAS Element Parameters on Building Seismic Response, 864
- Instability of Buildings Subjected to Earthquakes, 882
- Interactive Base-Isolation Foundation System: I. Finite Element Formulation, 277
- Interactive Base-Isolation Foundation System: II. Parametric Study, 278
- Load Shortening in Plastic Buckling of Cylinders, 267
- Out-of-Plane Seismic Response of Reinforced Masonry Walls, 896
- Propagation of Long Waves Onto Shelf, 1080
- Recorded Seismic Response of Pacific Park Plaza. II: System Identification, 846
- Roof-Snow Load for Seismic-Design Calculations, 887
- Seattle Plays It Safe, 1187
- Seismic Assessment of Tailings Dams, 1232
- Seismic Response of Pacific Park Plaza. I: Data and Preliminary Analysis, 845
- Seismic Response of R/C Frames with Irregular Profiles, 786
- Seismic-Energy Dissipation in MDOF Structures, 828
- Stable Controllers for Instantaneous Optimal Control, 249
- Steady-State Strength Analysis of Lower San Fernando Dam Slide, 387
- Structural Seismic Damper, 823

Earthquakes

- Three-Dimensional Seismic Analysis of La Villita Dam, 471
- Undrained Shear Strength of Liquefied Sands for Stability Analysis, 460
- Wave Attenuation in Viscoelastic Continuum with Fading Memory, 248
- Earthwork**
- Estimating Earthwork Volumes of Curved Roadways: Mathematical Model, 1021
- Eccentric bracing**
- Experimental Performance of Long Links in Eccentrically Braced Frames, 929
- Eccentricity**
- Statistical Analysis of Slender Composite Beam-Column Strength, 832
- Economic analysis**
- Automation of Concrete Slab-on-Grade Construction, 134
- Benefit-Cost Ratios: Failures and Alternatives, 1042
- Cost Models for Preliminary Economic Evaluation of Sprinkler Irrigation Systems, 625
- Method for Prevaluation and Selection of Road Projects in Gabon, 978
- Quantification of Agency and User Values of Pavement Performance, 973
- Economic conditions**
- Improving International Competitiveness, 733
- Economic factors**
- California's Tradable Emissions Policy and Greenhouse Gas Control, 143
- Diesel as Case of Consumer Choice in Alternative Transport Fuels, 145
- From Sludge to Brokered Biosolids, 1185
- Lessons Not Learned from 1989 Loma Prieta Earthquake, 736
- U.S. Sludge Digesters: From Pancakes to Eggs, 1205
- Economic impact**
- Conflict of Interest in Deep-Draft Anchorage Usage—Application of QT, 1082
- Earthquakes: A New Look at Cracked Masonry, 1219
- Rehabilitation of Infrastructure in Infill Sites, 753
- Economic justification**
- California's Tradable Emissions Policy and Greenhouse Gas Control, 143
- Small Utility GIS, 1223
- Economics**
- Benefit-Cost Ratios: Failures and Alternatives, 1042
- Conflict of Interest in Deep-Draft Anchorage Usage—Application of QT, 1082
- The Desalination Situation, 1188
- Engineering-Econometric Model of Energy Demand, 146
- Fundamentals and Application of Windrow Composting, 11
- Improving International Competitiveness, 733
- Model for Prescribing Ground-Water Use Permits, 1069
- Ecosystems**
- Probabilistic Environmental Risk of Hazardous Materials, 360

1992 ASCE TRANSACTIONS

- Water, Endangered Ecosystem: Assessment of Chemical Pollution, 335
- Ecuador**
- Civil Engineering Education in Ecuador, 756
- Ecuador's Rural Cadasters and Land Titling Project (CATIR): Technical Process, 966
- Eddy viscosity**
- Vertical Distribution of Suspended Sediment in Uniform Open-Channel Flow, 522
- Education**
- Beyond Push-Button GPS, 1175
- A Challenge for Research, 115
- Portrait of a Manager, 1191
- Effective length**
- New Stability Equation for Columns in Braced Frames, 861
- Theoretical Study of Stability Criteria for X-Bracing Systems, 233
- Effective stress**
- Stability of Concrete Gravity Dams with Drained and Finite Cracks, 149
- Wave-Induced Effective Stress in Seabed and Its Momentary Liquefaction, 1091
- Effective width**
- Modeling Slab Contribution in Frame Connections, 895
- Efficiency**
- Efficiency Formula for Pile Groups, 382
- Noncontractual Methods of Integration on Construction Projects, 113
- Strength and Efficiency of Wood Box Columns, 796
- Effluents**
- Design Procedures for Effluent Discharge to Estuaries During Ebb Tide, 327
- Mechanism of Biological Treatment in Plug-Flow or Batch Systems, 344
- Sampling of Wastewater Effluent, 318
- Egypt**
- Relating Crop-Yield Response to Water-Table Fluctuations, 579
- Eigenvalues**
- Graph-Theory Approach to Eigenvalue Problem of Large Space Structures, 20
- Stochastic FEM Based on Local Averages of Random Vector Fields, 183
- Eigenvectors**
- Stochastic FEM Based on Local Averages of Random Vector Fields, 183
- Elastic analysis**
- Analysis for Soil Reinforcement with Bending Stiffness, 448
- Elastic Analysis of Submarine Pipelines, 762
- Elastic Buckling of Incomplete Composite Plates, 154
- Elastic Solutions for Arbitrarily Shaped Foundations, 414
- Elastic foundations**
- Dynamic Response of Beams on Elastic Foundation, 805
- Hypar Shell on Pasternak Foundation, 230

SUBJECT INDEX

Empirical equations

Sensitivity Analysis of Thin-Walled I-Beams Resting on Elastic Foundation, 226

Timoshenko Beam Element Resting on Two-Parameter Elastic Foundation, 171

Elastic media

Dynamics of Saturated Rocks. IV: Column and Borehole Problems, 261

Response of Cross-Anisotropic Seabed to Ocean Waves, 437

Elastic properties

Inverse Analysis of Geotechnical Parameters on Improved Soft Bangkok Clay, 419

Straight, Single-Tapered Composite I-Beams of Orthotropic Materials, 701

Elasticity

Bending of Rectangular Cross-Section Cantilever with Cylindrical Cutouts, 203

Buckling of Skew Plates and Corner Condition for Simply Supported Edges, 193

Distortional Buckling Solutions for Continuous Composite Beams, 761

Dynamic Elastic-Plastic Buckling Behavior Illustrated by Simple Model, 274

Effective Strength of 'Square-and-Diagonal' Double-Layer Grid, 760

Elastic Stability of Composite Column, 295

Energy Equation for Beam Lateral Buckling, 840

Engineering Mechanics, 1245

Family of Iterative Shear-Deformation Theories for Shallow Shells, 286

Flow-Deformation Response of Dual-Porosity Media, 374

Frictionless Contact with BEM Using Quadratic Programming, 266

Influence of Seafloor on Acoustic Plane Wave, 273

Pullout Stiffness of Elastic Anchors in Slope Stabilization Systems, 412

Stresses Induced by Surficial and Deep Loading in Elastic Medium, 432

Three-Dimensional Solutions for Thermal Buckling of Multilayered Anisotropic Plates, 195

Torsional Stresses in Tubular Lap Joints with Tapered Adherends, 272

Elastomer

Properties of PVB Interlayer Used in Laminated Glass, 677

Elastoplasticity

Elastoplastic Nonlinear Analysis of Flexibly Jointed Space Frames, 763

Evaluation of Plastic Bifurcation for Plane Strain versus Axisymmetry, 184

Simple Double-Hardening Model for Geomaterials, 411

Electrical conductivity

Electrokinetic Cleanups, 1211

Phenol Removal from Kaolinite by Electrokinetics, 466

Salinity of Rivers: Transfer Function-Noise Approach, 596

Electrification

Phenol Removal from Kaolinite by Electrokinetics, 466

Electroosmosis

Electroosmotic Contaminant-Removal Processes, 311

Electroosmotic Removal of Gasoline Hydrocarbons and TCE From Clay, 310

Elevation

Orthometric Heights from Global Positioning System, 962

Embankment stability

Gabions and Geogrids, 1201

Performance of Test Embankment Constructed to Failure on Soft Marine Clay, 369

Stability and Performance of Slopes and Embankments II, 1270

Embankments

Bearing Capacity on Nonhomogeneous Cohesive Soils under Embankments, 424

Gabions and Geogrids, 1201

Performance of Test Embankment Constructed to Failure on Soft Marine Clay, 369

Review of Wetting-Induced Collapse in Compacted Soil, 442

Stability Analysis of Reinforced Embankments on Soft Soils, 474

Stability and Performance of Slopes and Embankments II, 1270

Embayments

Model for Estimating Tidal Flushing of Small Embayments, 1117

Embedded foundations

Rocking Impedance of Embedded Strip Foundations in Layered Soil, 407

Torsional Radiation Damping of Arbitrarily Shaped Embedded Foundations, 428

Torsional Stiffness of Arbitrarily Shaped Embedded Foundations, 427

Embedment

Ductile Multiple-Anchor Steel-to-Concrete Connections, 850

Emergency services

LGG System for Emergency Response Applications, 964

Emission control

California's Tradable Emissions Policy and Greenhouse Gas Control, 143

Diesel as Case of Consumer Choice in Alternative Transport Fuels, 145

Transportation Planning and Air Quality, 1273

VOCs: The New Effluent, 1138

Emission standards

VOCs: The New Effluent, 1138

Emissions

California's Tradable Emissions Policy and Greenhouse Gas Control, 143

Transportation Planning and Air Quality, 1273

Empirical equations

Empirical Estimation of Double-Layer Repulsive Force between Two Inclined Clay Particles of Finite Length, 399

Postdensification Penetration Resistance of Clean Sands, 12

Employee benefits

Employee benefits

ASCE 1991 Salary Survey: Summary of Findings, 739

Employee relations

Financial Incentive Programs for Average-Size Construction Firm, 129

Four Propositions for Quality Management of Design Organizations, 645

Nonmonetary Incentives: It Can be Done, 647

Using Quality Circles to Raise Productivity and Quality of Work Life, 90

Employees

Efficacy of Drug Testing Programs Implemented by Contractors, 137

Staffing Up for a Major Program, 1124

Substitutes for Leadership and Unionized Construction Carpenters, 110

Employment

Estimating Functional Population for Facility Planning, 1027

Employment conditions

ASCE 1991 Salary Survey: Summary of Findings, 739

Issues in Human Resources: Managing Talent in the 21st Century, 666

Managing and Motivating People on a Joint Venture Project, 668

Employment opportunities

Providing Lead Role in Work-Force Diversity, 728

End restraint

Elastoplastic Nonlinear Analysis of Flexibly Jointed Space Frames, 763

Energy

Energy Equation for Beam Lateral Buckling, 840

Momentum and Energy Coefficients Based on Power-Law Velocity Profile, 563

Novel Combined-Cycle Low-Temperature Engine System, 153

Power Flow and Energy in Primary-Secondary Systems, 215

Prebuckling Deflections and Lateral Buckling. I: Theory, 922

Prebuckling Deflections and Lateral Buckling. II: Applications, 923

Energy budget

BEST: New Satellite Mission Dedicated to Tropical System Energy Budget, 15

Energy consumption

Engineering-Econometric Model of Energy Demand, 146

Energy conversion

Positive Drift of a Backward-Bent Duct Barge, 1084

Energy dissipation

Analysis of ARS Low-Drop Grade-Control Structure, 554

Energy Dissipation in Determinate Steel Beams, 757

Energy Dissipation in Indeterminate Steel Beams, 758

Flow and Energy Dissipation Over Stepped Gabion Weirs, 507

Seismic Analysis Design of Frames with Viscoelastic Connections, 894

1992 ASCE TRANSACTIONS

Seismic-Energy Dissipation in MDOF Structures, 828

Stability Theory of Cohesive Crack Model, 189

Structural Seismic Damper, 823

Energy methods

Elastic Stability of Composite Column, 295

Mutual Residual Energy Method for Parameter Estimation in Structures, 769

Energy sources

Novel Combined-Cycle Low-Temperature Engine System, 153

Engineering

Many Engineering Issues and Challenges Met in Development of Hong Kong, 731

Engineering education

Civil Engineering Capstone Design Course, 746

Civil Engineering Education in Ecuador, 756

Civil Engineering Experience and Education, 732

Computing in Civil Engineering: Current Trends and Future Directions, 737

Critical Issues for Engineering Managers, 658

Delineating Theory for GPS Surveying, 960

Education and Research in Japan's Construction Industry, 747

Educational Needs of Civil Engineers in Management, 657

Experience-Based Issues in Construction Education, 754

Future Concerns in Environmental Engineering Graduate Education, 752

Future Resources for Engineering, 727

Military Leaders and Civil Engineers—An Air Force Academy Challenge, 742

Practitioner Involvement with Engineering Ethics and Professionalism, 729

Reflection in Problem Solving and Design, 741

Strategies to Stem Declining Engineering Enrollments, 743

Technology is Here—Are You Ready?, 661

Upgrading the First Professional Degree, 750

Women in Civil Engineering—Graduate's Perspective, 726

Engineering firms

Improving International Competitiveness, 733

Introduction to Ownership and Transition. I: Ownership Transfer Considerations, 669

Introduction to Ownership and Transition. II: Succession and Firm Valuation, 670

Engineering mechanics

Engineering Mechanics, 1245

Engineering profession

Challenges of The Changing Profession, 724

Engineering Issues for Early Lunar-Based Telescopes, 38

Future Resources for Engineering, 727

Engineering societies

Visioning: The Future of Civil Engineering, 740

Engineers

Design Engineer/Contractor Bankruptcy: Considerations for Debtor and Creditors, 663

Introduction to Ownership and Transition. I: Ownership Transfer Considerations, 669

Issues in Human Resources: Managing Talent in the 21st Century, 666

Entrainment

Note on Lag in Bedload Discharge, 520

Entropy

Variation of Velocity Distribution along Nonuniform Open-Channel Flow, 525

Environmental effects

Innovative Reregulation Weirs, 1163

Moisture and Suction in Sanitary Landfills in Semiarid Areas, 359

Environmental engineering

Canada's Green Plan: Unique Approach to Preserving Environment, 751

Capturing Capital, 1164

Environmental Engineering: Saving a Threatened Resource—In Search of Solutions, 1246

Future Concerns in Environmental Engineering Graduate Education, 752

Environmental factors

Design and Construction Considerations for Lunar Outpost, 33

Framework for Evaluation of Lunar Base Structural Concepts, 28

Overview of Existing Lunar Base Structural Concepts, 26

Environmental impacts

Creating Wetlands, 1186

The Evolution of an Environmental Monitor, 1170

The Greening of Greens, 1210

Model for Estimating Tidal Flushing of Small Embayments, 1117

Model for Prescribing Ground-Water Use Permits, 1069

Piles Over Problems Sites, 1155

Probabilistic Environmental Risk of Hazardous Materials, 360

QSAR Parameters for Toxicity of Organic Chemicals to *Nitrobacter*, 307

Sediment and Aquatic Habitat in River Systems, 505

Environmental issues

Coastal Engineering Practice '92, 1237

Dealing with Uncertainty: From Health-Risk Assessment to Environmental Decision Making, 144

The Environment is Good Business in France, 1145

Environmental Engineering: Saving a Threatened Resource—In Search of Solutions, 1246

Estuarine and Coastal Modeling, 1247

Excavation and Support for the Urban Infrastructure, 1248

From Sludge to Brokered Biosolids, 1185

Future Trends and Needs in Hydraulics, 564

The Greening of Greens, 1210

In Too Deep, 1233

International Air Transportation: A New International Airport, 1256

Irrigation and Drainage: Saving a Threatened Resource—In Search of Solutions, 1257

Pilot Waste-Stabilization Pond in Tanzania, 323

Ports '92, 1263

Reassessing the Risk Assessment, 1139

Environmental quality

Canada's Green Plan: Unique Approach to Preserving Environment, 751

Electroosmotic Removal of Gasoline Hydrocarbons and TCE From Clay, 310

Environmental Engineering: Saving a Threatened Resource—In Search of Solutions, 1246

The Evolution of an Environmental Monitor, 1170

Pilot Waste-Stabilization Pond in Tanzania, 323

Reassessing the Risk Assessment, 1139

Environmental research

Taming Environmental Data, 1192

Epoxy resins

Fatigue Resistance of Large-Diameter Cable for Cable-Stayed Bridges, 795

Equations of motion

Comparative Survey of Four Unsaturated Soil Flow Equations, 512

Dynamic Behavior of Nonlinear Cable System. I, 206

Fully Coupled Unsteady Mobile Boundary Flow Model (FCM), 497

Equilibrium

Statically Determinate Trusses Programmed in Logic, 84

Equilibrium profile

Prediction of Storm/Normal Beach Profiles, 1090

Equilibrium state

Mathematical Model for Piping, 415

Equipment

Automating The Corps, 1156

Expert System for Equipment Selection for Earth-Moving Operations, 109

Safety and Service Life of Equipment Designed for Cold Climate Operation, 56

Equipment costs

Consequential Equipment Costs Associated with Lack of Availability and Downtime, 13

Equivalence

Equivalent Kostiakov Parameters for SCS Infiltration Families, 585

Erosion

Bed-Load Coefficients, 555

Beginning of Motion for Selected Unanchored Residue Materials, 614

Bridge Pier Scour with Debris Accumulation, 545

Darcy-Weisbach Roughness Coefficients for Gravel and Cobble Surfaces, 578

Effect of Spoilers on Scour at Submarine Pipelines, 546

Effects of Sea-Level Rise on Bays and Estuaries, 476

Hydroturbine Cavitation Erosion, 152

Hyperconcentrated Sand-Water Mixture Flows over Eroding Bed, 559

Incipient Motion during Static Armoring, 498

Local Scour at Bridge Abutments, 504

Routing Debris Flows with Particle Segregation, 558

Scour Around a Vertical Pile in Waves, 1078

Scour Protection at Bridge Piers, 542

Erosion control

Beginning of Motion for Selected Unanchored Residue Materials, 614

Dams Going Safely over the Top, 1122

Scour Protection at Bridge Piers, 542

Error analysis

AASHTO Direct Structural Capacity Method Error Analysis, 969

Equivalent Linearization for Seismic Responses. I: Formulation and Error Analysis, 289

Precision of Evapotranspiration Estimates Using Neutron Probe, 638

Robust Testing Procedure for Detection of Multiple Blunders, 958

Errors

Robust Testing Procedure for Detection of Multiple Blunders, 958

Estimating

Estimating Peak Flows from Small Agricultural Watersheds, 580

Heavy Construction Estimates, With and Without Computers, 122

Estimation

Mutual Residual Energy Method for Parameter Estimation in Structures, 769

Procedures for Estimating Accident Reductions on Two-Lane Highways, 975

Recursive Parameter Estimation for ARMA Simulations, 304

Estuaries

Design Procedures for Effluent Discharge to Estuaries During Ebb Tide, 327

Effects of Sea-Level Rise on Bays and Estuaries, 476

Estuarine and Coastal Modeling, 1247

Lagrangian Solution of St. Venant's Equations for Alluvial Estuary, 536

Longitudinal Dispersion Coefficients in Estuary, 508

Mesh Generation for Estuarine Flow Modeling, 1115

Proposed Similarity Law for Surface Velocity in Hydraulic Models, 547

Rapidly Varied Flow Analysis of Undular Bore, 1105

Review of Equations of Conservation in Curvilinear Coordinates, 292

Simulating THM Formation Potential in Sacramento Delta: Part I, 1067

Simulating THM Formation Potential in the Sacramento Delta: Part II, 1068

Ethics

ASCE Should Have a Construction Safety Committee, 730

Civil Engineers Shaping Society: Our Social Responsibilities, 725

Practitioner Involvement with Engineering Ethics and Professionalism, 729

Europe

A European Road Comes to the U.S., 1159

Underground Research: Here and There, 1229

Eutrophication

Partitioning Phosphorus Loads: Implications for Lake Restoration, 1070

Evaluation

Framework for Evaluation of Lunar Base Structural Concepts, 28

Risk Analysis Approach to Selection of Contractor Evaluation Method, 139

Evaporation

Equation for Evaporation Pan to Evapotranspiration Conversions, 642

Modeling Desiccating Behavior of Mine Tailings, 393

Modeling of Soil Venting Processes to Remediate Unsaturated Soils, 314

Evapotranspiration

Analysis of Evaporative Flux Data for Various Climates, 613

Equation for Evaporation Pan to Evapotranspiration Conversions, 642

Estimation of Daytime Net Radiation Over Well-Watered Grass, 604

Evapotranspiration and Irrigation Water Requirements, 2

Irrigation Timing for Wheat Based on Climate, Crop, and Soil Data, 598

Modeling Irrigation Schedules for Lowland Rice with Stochastic Rainfall, 573

Precision of Evapotranspiration Estimates Using Neutron Probe, 638

Stochastic Model for Soil Moisture Deficit in Irrigated Lands, 608

Evolution, development

Strain-Based Constitutive Model with Mixed Evolution Rules for Concrete, 223

Excavation

Excavation and Support for the Urban Infrastructure, 1248

Free Boundary, Fluid Flow, and Seepage Forces in Excavations, 375

In Too Deep, 1233

Mining for Building Expansion, 1227

Modeling Effects of Chemical Explosives for Excavation on Moon, 18

Object-Oriented Programming in Robotics Research for Excavation, 80

Use of Explosives on the Moon, 19

Excitation

Dynamic Behavior of Nonlinear Cable System. II, 207

Parametric and External Excitation of Marine Risers, 209

Random Vibration under Propagating Excitation: Closed-Form Solutions, 188

Expansion

The Caisson Solution, 1226

One-Dimensional Model for Analysis of CRC Pavement Growth, 1004

Expansion joints

Temperature Dependent Bridge Movements, 819

Expansive soils

Damage to Two Apartment Buildings Due to Moisture Variation of Expansive Soil, 718

Irrigation, Drainage, and Landscaping for Expansive Soil, 592

Soil Suction-Potential Model, 392

Swell versus Saturation for Compacted Clay, 436
Walking of Flatwork on Expansive Soils, 708

Experience

Acquisition of Expert Judgment: Examples from Risk Assessment, 148
Civil Engineering Experience and Education, 732
Experience-Based Issues in Construction Education, 754

Experimental data

Kinematics of 2-D Transient Water Waves Using Laser Doppler Anemometry, 1087

Experimentation

Dynamic Experiments on Two Pile Groups, 395
Experimental Performance of Long Links in Eccentrically Braced Frames, 929
Measurement and Prediction of Surface Shear Stress in Annular Flume, 543
Strength of Composite Slabs, 889
Wave Runup and Forces on Cylinders in Regular and Random Waves, 1116
Wood Connections with Heavy Bolts and Steel Plates, 4

Expert systems

Building KBES for Diagnosing PC Pile With Inductive Learning, 71
Combined Symbolic-Numeric Explosion Damage Assessment for Structures, 83
CONSCHEd: Expert System for Scheduling of Modular Construction Projects, 119
Decision Support System for Crop Planning during Droughts, 588
Distributed Approach to Optimized Control of Street Traffic Signals, 974
Expert System for Anaerobic-Digestion-Process Operation, 364
Expert System for Construction Safety. I: Fault-Tree Models, 722
Expert System for Construction Safety. II: Knowledge Base, 723
Expert System for Equipment Selection for Earth-Moving Operations, 109
Expert Systems for Civil Engineers: Knowledge Representation, 1249
Expert Systems: Ready to Hit the Road?, 1174
Flavors and Mixins of Expert Systems Technology Transfer Model for AEC Industry, 116
Knowledge Acquisition and Development for Formwork Selection System, 101
Knowledge Acquisition in Civil Engineering, 1258
Knowledge-Based System for Design of Signalized Intersections, 982
Reservoir Systems Analysis: Closing Gap Between Theory and Practice, 1052
Site Event Advisor: Expert System for Contract Claims, 86
Site-Layout Modeling: How Can Artificial Intelligence Help?, 125
SuperChange: Expert System for Analysis of Changes Claims, 114
Systems Analysis in Water-Distribution Network Design: From Theory to Practice, 1050
Traffic Signal Using Mixed Controller Operations, 1023

Using Expert Systems to Manage Professional Survey Practices, 961

Explosion effects

Modeling Effects of Chemical Explosives for Excavation on Moon, 18
Use of Explosives on the Moon, 19

Explosions

Combined Symbolic-Numeric Explosion Damage Assessment for Structures, 83

Explosives

Out with the Old, 1197
Time-Dependent Cone Penetration Resistance Due to Blasting, 429

Extraction procedures

Tackling Trapped Sediments, 1134

Extraterrestrial bases

Engineering, Construction, and Operations in Space III, 1244

Fabrication

Beam-Column Behavior of Fabricated Steel Tubular Members, 826

Fabrics

Construction of Grout-Impregnated Fabric-Reinforced Pipes, 107
Tensile Terminal, 1215

Facilities

Boston's City within a City, 1206
Civil Engineering Education in Ecuador, 756
Emerging Issues in Transportation Facilities Management, 999
Estimating Functional Population for Facility Planning, 1027
Integrating Facility Delivery through Spatial Information, 1025
Overview of Existing Lunar Base Structural Concepts, 26
Partitioning of Elements by Refuse Processing, 350
Technical Issues for Lunar Base Structures, 27
Wastewater under Home Plate, 1212

Facility

Civil Engineering Education in Ecuador, 756
Experience-Based Issues in Construction Education, 754
Future Concerns in Environmental Engineering Graduate Education, 752

Failure load

Analysis of Welded Tubular Connections Using Continuum Damage Mechanics, 803

Failure modes

Constitutive Model for Concrete in Strain Space, 268
Influence of Seepage on Stability of Sandy Slope, 431
Prying and Shear in End-Plate Connection Design, 831

Failures

Balanced Seismic Design of Anchored Retaining Walls, 410
Computed Versus Observed Seismic Response and Damage of Masonry Buildings, 858
Field Load Test on Full-Scale Reinforced Concrete Frame, 715

Failures

- Fill-Slope Failure and Repair, 717
- Financial Performance Analysis for Construction Industry, 111
- Fine Ottawa Sand: Experimental Behavior and Theoretical Predictions, 469
- Generalized Slope Stability Analysis: Interpretation, Modification, and Comparison, 451
- Generalized Three-Dimensional Slope-Stability Analysis, 461
- The Great Chicago Flood of 1992, 1218
- Howe Truss Behavior Interpreted by Deflections, 716
- In-Place Shear Testing of Tile, 691
- Load-Duration Effects in Structural Lumber: Strain Energy Approach, 888
- Modified Stub-Girder Floor System: Full-Scale Tests, 939
- Nonlinear Modeling of Truss-Plate Joints, 897
- Perils of Point Loma, 1221
- Predicting Construction Contractor Failure prior to Contract Award, 138
- Probabilistic Environmental Risk of Hazardous Materials, 360
- Quantitative Study of Contractor Evaluation Programs and Their Impact, 126
- Re-examination of Ylinen and Other Column Equations, 908
- Second-Order Inelastic Analysis Methods for Steel-Frame Design, 779
- Softening and Snap-Through Behavior of Reinforced Elements, 246
- Static Instability and Liquefaction of Loose Fine Sandy Slopes, 371
- Steady-State and Multiple Cracking of Short Random Fiber Composites, 291
- Strength of Concrete-Filled Thin-Walled Steel Box Columns: Experiment, 927
- Thoughts on Management of Acquisitions, 651
- Failures, investigations**
 - Investigation of L'Ambiance Plaza Building Collapse, 720
- Farm management**
 - Participative Process in Tube Well Irrigation Development, 634
- Farms**
 - Design and Operation of On-Farm Irrigation Ponds, 618
- Fast track construction**
 - Life in the Fast Track, 1150
 - A New Fast Track for Public Works, 1129
 - Perils of Point Loma, 1221
- Fasteners**
 - Modeling Horizontally Nail-Laminated Beams, 836
 - Strength of Lag-Screw Connections, 916
- Fatalities**
 - Aspects of Road-Accident Death Analyses, 986
- Fatigue**
 - Durability of MSW Fly-Ash Concrete, 699
 - Effect of Tire Parameters on Pavement Damage and Load-Equivalency Factors, 1019
 - Fatigue of Welded Cruciforms Subjected to Narrow-Band Loadings, 172

1992 ASCE TRANSACTIONS

- Residual Strength of Structural Components Subjected to Cyclic Loads, 903
- Secondary Stresses in Closed Orthotropic Deck Ribs at Floor Beams, 788
- Systems Reliability Approach to Fatigue of Structures, 794
- Fatigue life**
 - Fatigue Life of Offshore Steel Structures Under Stochastic Loading, 874
 - Free-Bending Fatigue Life Estimation of Cables at Points of Fixity, 258
 - Structural Efficiency of Internally Ring-Stiffened Steel Tubular Joints, 926
- Fatigue strength**
 - Fatigue Resistance of Large-Diameter Cable for Cable-Stayed Bridges, 795
- Fatigue tests**
 - Damage of Concrete in Fatigue, 287
 - Fatigue Resistance of Large-Diameter Cable for Cable-Stayed Bridges, 795
- Federal government**
 - Government-Industry Cooperation: Fast-Track Concrete Innovation, 117
- Federal laws**
 - A New Era In Transportation, 1148
- Federal project policy**
 - A New Era In Transportation, 1148
- Federal role**
 - Canada's Green Plan: Unique Approach to Preserving Environment, 751
- Federal-state cooperation**
 - The Roads Ahead, 1152
- Feedback control**
 - Bayesian Inference for Feedback Control. I: Theory, 600
 - Bayesian Inference for Feedback Control. II: Surface Irrigation Example, 601
 - Feedback Control of Basin-Irrigation System, 605
 - Multireservoir Sewer-Network Control via Multivariable Feedback, 1071
 - Wave-Motion Stability in Canals with Automatic Controllers, 565
- Feedback loops**
 - Feedback Mechanisms for Operational Simulation, 69
 - Implementation of TQM in Building Design and Construction, 665
- Fees**
 - Impact Fees: Practical Guide for Calculation and Implementation, 1032
 - Positive Influence of Impact-Fee Policy in Urban Planning and Development, 1028
- Fiber composites**
 - Modeling Stiffness Degradation in Filamentary Composite Materials, 686
 - Steady-State and Multiple Cracking of Short Random Fiber Composites, 291
- Fiber optics**
 - Smart Structures, 1222

SUBJECT INDEX

Fiber reinforced materials

- Deformational Behavior of Fiber-Reinforced Concrete Beams in Bending, 906
- Fiber: Good For the Concrete Diet?, 1157
- Flexural Analysis of Reinforced Concrete Beams Containing Steel Fibers, 914
- Fracture-Based Two-Way Debonding Model for Discontinuous Fibers in Elastic Matrix, 294
- Normal- and High-Strength Fiber-Reinforced Concrete under Compression, 702
- Postcrack Scaling Relations for Fiber Reinforced Cementitious Composites, 675
- Properties of Aramid-Fiber Reinforced Concrete and SIFCON, 672
- Seismic Behavior and Shear Strength of Framed Joint Using Steel-Fiber Reinforced Concrete, 775

Fiber reinforced plastics

- Bond Anchorage of Pretensioned FRP Tendon at Force Release, 915
- FRP-Reinforced Wood as Structural Material, 694
- Prestressed FRP Sheets as External Reinforcement of Wood Members, 829
- Short-Term Behavior of Pultruded Fiber-Reinforced Plastic Frame, 866

Fibers

- Fracture-Based Two-Way Debonding Model for Discontinuous Fibers in Elastic Matrix, 294
- Moisture Effects on Flexural Performance of Wood Fiber-Cement Composites, 692

Field investigations

- Design Implications of Measured Pressures and Strains in Silos, 909
- Field Performance and Analysis of Steep Riprap, 445
- Hyperconcentrated Sand-Water Mixture Flows over Erodible Bed, 559
- Laboratory Simulations of Directionally Spread Shallowing Waves, 1083
- Performance of Masonry Walls: Case Study in Kuwait, 678
- Relating Crop-Yield Response to Water-Table Fluctuations, 579

Field tests

- Calibrating SHE Soil-Erosion Model for Different Land Covers, 621
- Defects in Aluminum Windows and Impact on Dust and Air Infiltration, 705
- Effect of Tire Parameters on Pavement Damage and Load-Equivalency Factors, 1019
- Field Load Test on Full-Scale Reinforced Concrete Frame, 715
- Field Test of 72-in.-Diameter Cast-in-Place Nonreinforced Concrete Pipe, 968
- Frictional Resistance of Overland Flow on Tropical Turfed Slope, 481
- Instrumenting the 'Y', 1217
- Laboratory versus Nondestructive Testing for Pavement Design, 980
- Longitudinal Dispersion Coefficients in Estuary, 508
- Loss of PCBs from Municipal-Sludge-Treated Farmland, 10
- Microorganism Survival in Ice-Covered Marine Environment, 53

Finite difference method

- Performance of Viaduct Girders under Static and Dynamic Loads, 711
 - Prediction of Natural Channel Hydraulic Roughness, 615
 - Prestressed-Concrete Railway-Bridge Live-Load Strains, 776
 - Pullout Tests Using Steel Grid Reinforcements with Low-Quality Backfill, 421
 - Seasonal Soil Strength by Spectral Analysis of Surface Waves, 51
 - Structural Evaluation of Box Culverts, 945
 - Walking of Flatwork on Expansive Soils, 708
 - Working Conditions of Sprinkler to Optimize Application of Water, 635
- ### Filters
- Estimating Thaw-Strain Settlement of Frozen Fill, 59
 - Fill-Slope Failure and Repair, 717
 - A Monumental Task, 1171
 - Review of Wetting-Induced Collapse in Compacted Soil, 442
 - Swell versus Saturation for Compacted Clay, 436
- ### Filters
- Appropriate Use of Deep-Bed Filtration Models, 365
 - Velocity Gradient in Filter Backwashing, 353
- ### Filtration
- Appropriate Use of Deep-Bed Filtration Models, 365
 - Synchrotron Radiation Measurements of Degree of Saturation in Porous Matrix, 257
- ### Finance
- Small Systems Struggle, 1119
- ### Financial analysis
- Financial Performance Analysis for Construction Industry, 111
- ### Financial incentive programs
- Financial Incentive Programs for Average-Size Construction Firm, 129
 - Strategies in Risk Management of On-Demand Guarantees, 103
- ### Financial management
- A New Fast Track for Public Works, 1129
- ### Financing
- Capturing Capital, 1164
 - Future Concerns in Environmental Engineering Graduate Education, 752
 - Housing America in the Twenty-First Century, 1254
 - Impact Fees: Practical Guide for Calculation and Implementation, 1032
 - Life in the Fast Track, 1150
 - Rehabilitation of Infrastructure in Infill Sites, 753
- ### Finegrained soils
- Fine Ottawa Sand: Experimental Behavior and Theoretical Predictions, 469
- ### Fineness
- Permeability of Roller Compacted Concrete, 674
- ### Finite difference method
- Computation Method for Regulating Unsteady Flow in Open Channels, 619
 - Elastic Buckling Coefficients for Long, Unstiffened Plates, 305

- Side Weir in Triangular Channel, 640
- Three-Dimensional Characteristics Model of Wind-Generated Turbulent Flow, 244
- Two-Dimensional Leachate Estimation through Landfills, 487

Finite differences

- Axisymmetric General Shells and Jointed Shells of Revolution, 937
- Dynamic Analysis of Elastoplastic Softening Discretized Structures, 297
- The Hopscotch Algorithm for Three-Dimensional Simulation, 492
- Hydrodynamic Furrow Irrigation Model with Specified Space Steps, 603

Finite element method

- Analysis and Design Models for Structural Concrete Bridge Deck Overlays, 8
- Analysis and Implementation of Thin-Layer Element for Interfaces and Joints, 302
- Analysis of Buildings Using Strain-Based Element with Rotational DOFs, 825
- Analysis of Delamination of Post-Tensioned Silos, 814
- Analysis of Laterally Loaded Shafts in Rock, 408
- Analysis of Welded Tubular Connections Using Continuum Damage Mechanics, 803
- Behavior of Concrete Hollow-Block Masonry Prisms under Axial Compression, 855
- Bond Anchorage of Pretensioned FRP Tendon at Force Release, 915
- Characteristic Dissipative Galerkin Scheme for Open-Channel Flow, 489
- Compression Failure of Quasibrittle Material: Nonlocal Microplane Model, 186
- Computed Versus Observed Seismic Response and Damage of Masonry Buildings, 858
- Correction Criteria of Finite Element Modeling in Structural Dynamics, 194
- Data Abstraction in Engineering Software Development, 76
- Design of Tied-Back Walls for Seismic Loading, 464
- Driving Characteristics of Open-Toe Piles in Dense Sand, 372
- Dynamic Response Analysis of Reinforced-Soil Retaining Wall, 426
- Empirical Estimation of Double-Layer Repulsive Force between Two Inclined Clay Particles of Finite Length, 399
- FEM Modeling of Fictitious Crack Propagation in Concrete, 179
- Finite Element Analysis of Cold Embedments in Fresh Concrete, 52
- Finite Element Analysis of Thin-Walled Curved Beams Made of Composites, 871
- Finite Element Modeling of Single-Solute Activated-Carbon Adsorption, 320
- Finite Element-Based Flutter Analysis of Cable-Suspended Bridges, 843
- Incorporating Load Sharing in Shear Wall Design of Light-Frame Structures, 948
- Mesh Generation for Estuarine Flow Modeling, 1115
- Microplane Model for Cyclic Triaxial Behavior of Concrete, 234
- Modeling Horizontally Nail-Laminated Beams, 836

- Multivariable Analysis Using Isoparametric Finite Elements, 256
- Nonlinear Finite-Element Model for Light-Frame Stud Walls, 933
- Nonlinear Stability Analysis of Steel Members by Finite Element Method, 180
- Numerical Study of Soil Anisotropy, 167
- Out-of-Plane Strengths of Steel Beams, 868
- Prying and Shear in End-Plate Connection Design, 831
- Seismic Response of Multianchored Retaining Walls, 463
- Shear-Stress Distribution in Symmetrically Tapered Cantilever Beam, 941
- Stochastic FEM Based on Local Averages of Random Vector Fields, 183
- Structural Evaluation of Box Culverts, 945
- Transverse Shear Effect on Flutter of Composite Panels, 47
- Wheel Load Distribution in I-Girder Highway Bridges, 830

Finite elements

- Antiplane Problems of Monoclinic Material, 259
- Arc-Length Method for Passing Limit Points in Structural Calculation, 766
- Bolted Connections in Wood under Bending/Tension Loading, 813
- Dynamic Analysis of Elastoplastic Softening Discretized Structures, 297
- Dynamic Analysis of Rigid Airport Pavements with Discontinuities, 989
- Dynamic Response of Beams on Elastic Foundation, 805
- Elastoplastic Nonlinear Analysis of Flexibly Jointed Space Frames, 763
- Exact Formulation of Axisymmetric-Interface-Element Stiffness Matrix, 435
- Finite Element Model for Seismic RC Coupled Walls Having Slender Coupling Beams, 921
- Finite Element Modeling of Concrete Expansion and Confinement, 890
- Frame Buckling Analysis with Full Consideration of Joint Compatibilities, 205
- Free Boundary, Fluid Flow, and Seepage Forces in Excavations, 375
- Improved Rectangular Element for Shear Deformable Plates, 173
- In-Plane Floor Deformations in RC Structures, 930
- Interactive Base-Isolation Foundation System: I. Finite Element Formulation, 277
- Interactive Base-Isolation Foundation System: II. Parametric Study, 278
- Low-Order Interpolation Functions for Curved Beams, 174
- Model Correction via Compatible Element Method, 39
- Modeling Stiffness Degradation in Filamentary Composite Materials, 686
- Necking of Creep-Cavitating Bars, 199
- New Spline Finite Element for Plate Bending, 216
- Performance of Test Embankment Constructed to Failure on Soft Marine Clay, 369
- Prefracking Deflections and Lateral Buckling. I: Theory, 922

SUBJECT INDEX

Floods

- Prebuckling Deflections and Lateral Buckling. II:
Applications, 923
- Reliability of Geometrically Nonlinear PR Frames,
285
- Steady-State Nonlinear Heat Transfer in Multilay-
ered Composite Panels, 252
- Straight, Single-Tapered Composite I-Beams of
Orthotropic Materials, 701
- Support Structures for High-Resolution Optical Sys-
tems, 17
- Tide and Storm Surge Predictions Using Finite Ele-
ment Model, 551
- Transition Plate-Bending Elements for Compatible
Mesh Gradation, 181
- Fire protection**
- High-Temperature Properties of Fire-Resistant Steel
for Buildings, 778
- Structural Fire Protection, 1271
- Fire resistance**
- Structural Fire Protection, 1271
- Fire resistant materials**
- High-Temperature Properties of Fire-Resistant Steel
for Buildings, 778
- Fire safety**
- Structural Fire Protection, 1271
- Fire tests**
- High-Temperature Properties of Fire-Resistant Steel
for Buildings, 778
- Fish habitats**
- Integrated Assessment of Acid-Deposition Effects on
Lake Acidification, 313
- Fixed objects**
- Free-Bending Fatigue Life Estimation of Cables at
Points of Fixity, 258
- Fixed-end beams**
- Fixed-End Moments and Thrusts of Planar Curved
Beams, 774
- Stitch Spacing and End Fixity in Seismic-Resistant
Boxed Angle Braces, 917
- Flash floods**
- Preferred Directions of Flow on Alluvial Fans, 526
- Flexibility**
- Adding Up Admixtures, 1158
- Elastic Analysis of Submarine Pipelines, 762
- Flexibility by Multireference Impact Testing for
Bridge Diagnostics, 879
- High-Order Theory for Sandwich-Beam Behavior
with Transversely Flexible Core, 214
- Nonlinear Impulsive Motions of Low-Tension
Cables, 202
- Flexible connections**
- Elastoplastic Nonlinear Analysis of Flexibly Jointed
Space Frames, 763
- Short-Term Behavior of Pultruded Fiber-Reinforced
Plastic Frame, 866
- Flexible pavements**
- Unified Pavement Distress Index for Managing Flexi-
ble Pavements, 1012
- Flexural strength**
- Design Method for Frozen-Soil Retaining Wall, 54
- Flexural Strength of Sand-Reinforced Ice, 3
- Flexural Tensile Strength of Partially Grouted Con-
crete Masonry, 950
- Flexure**
- Analytical Moment-Curvature Relations for Tied
Concrete Columns, 785
- Bending of Rectangular Cross-Section Cantilever
with Cylindrical Cutouts, 203
- Buckling of Columns of Variable Flexural Rigidity,
192
- Flexural Analysis of Reinforced Concrete Beams
Containing Steel Fibers, 914
- Flexural-Torsional Stability of Thin-Walled Col-
umns, 299
- Modeling Slab Contribution in Frame Connections,
895
- Moisture Effects on Flexural Performance of Wood
Fiber-Cement Composites, 692
- Support Structures for High-Resolution Optical Sys-
tems, 17
- Flocculating**
- Type II Sedimentation: Removal Efficiency from
Column-Settling Tests, 334
- Flocculation**
- Density Currents and Shear-Induced Flocculation in
Sedimentation Tanks, 517
- Flood control**
- Design of Flood Protection for Transportation Align-
ments on Alluvial Fans, 595
- Hydraulic Engineering: Saving a Threatened
Resource—In Search of Solutions, 1255
- Preliminary Sizing of Detention Reservoirs to
Reduce Peak Discharges, 561
- Flood damage**
- Design-Basis Flood for Rehabilitation of Existing
Dams, 486
- Flood forecasting**
- Appropriate Technology for Flood Warnings, 1172
- Separation of Skewness: Reality or Regional Arti-
fact?, 496
- Flood frequency**
- New Look at Regional Flood-Frequency Relations for
Arid Lands, 518
- Flood peaks**
- Design of Flood Protection for Transportation Align-
ments on Alluvial Fans, 595
- Flood plains**
- Preferred Directions of Flow on Alluvial Fans, 526
- Flood routing**
- Numerical Solution of Muskingum Equation, 515
- Flooding**
- Appropriate Technology for Flood Warnings, 1172
- Floods**
- 1-D Open-Channel Flow Simulation Using TVD-
McCormack Scheme, 550
- Design of Flood Protection for Transportation Align-
ments on Alluvial Fans, 595
- Evaluation of Supercritical/Subcritical Flows in
High-Gradient Channel, 533
- The Great Chicago Flood of 1992, 1218

Irrigation and Drainage: Saving a Threatened Resource—In Search of Solutions, 1257

Jury Verdict: Frequency versus Risk-Based Culvert Design, 1046

New Look at Regional Flood-Frequency Relations for Arid Lands, 518

Separation of Skewness: Reality or Regional Artifact?, 496

Floors

Design Live Loads for Coherent Crowd Harmonic Movements, 821

Dynamics of Buildings with V-Shaped Plan, 218

Experimental Study of Secondary Systems in Base-Isolated Structure, 880

Moisture Migration Through Concrete Floor Slabs, 707

Tuned Mass Dampers for Balcony Vibration Control, 797

Tuned Mass Dampers to Control Floor Vibration from Humans, 798

Using Component Mode Synthesis and Static Shapes for Tuning TMDs, 799

Florida

Linking Data Bases to Hydraulic Computations, 63

Pay As You Grow, 1135

Flotation

Effect of Collector Dosage on Metal Removal by Precipitation/Flotation, 363

Flow

Flow and Energy Dissipation Over Stepped Gabion Weirs, 507

Improvement of Flow in Final Settling Tanks, 325

Mesh Generation for Estuarine Flow Modeling, 1115

Flow control

Momentum Model of Flow Past Weir, 644

Sluice-Gate Discharge Equations, 574

Flow measurement

Critical Depth Relations for Flow Measurement Design, 616

Flow Measurement with Rectangular Free Overfall, 639

Momentum Model of Flow Past Weir, 644

Sluice-Gate Discharge Equations, 574

Small Parshall Flume Rating Correction, 514

Flow patterns

About Moving Contact Lines, 198

Drainage Efficiency of Sand Layer in Layered Clay-Sand Reclamation, 378

Routing Debris Flows with Particle Segregation, 558

Stepwise Disaggregation Scheme for Synthetic Hydrology, 511

Flow rates

ALIVE (Advance Linear Velocity): Surface Irrigation Rate Balance Theory, 581

Flow Rates at Signalized Intersections Under Cold Winter Conditions, 996

Furrow Flow Velocity Effect on Hydraulic Roughness, 643

Linking Data Bases to Hydraulic Computations, 63

Small Parshall Flume Rating Correction, 514

Flow resistance

Alluvial Canals Adequacy, 609

Dimensionally Homogeneous Manning's Formula, 548

Field-Measured Hydraulic Resistance Characteristics in Vegetation-Infested Canals, 590

Flow Capacity through Wide and Submerged Vegetal Channels, 622

Furrow Flow Velocity Effect on Hydraulic Roughness, 643

Mechanics of Saltating Grains. II, 500

Modern Approach to Design of Grassed Channels, 623

Predicting Influence of Bank Vegetation on Channel Capacity, 530

Stochastic Theory for Irregular Stream Modeling. Part I: Flow Resistance, 531

Fluid flow

Controlling Pulsed Incompressible Flow, 140

Estimating Wave-Induced Bottom Velocities at Vertical Wall, 1089

Free Boundary, Fluid Flow, and Seepage Forces in Excavations, 375

Measured Internal Kinematics for Shoaling Waves with Theoretical Comparisons, 1098

Shoreline Profile of Stokes-Mode Edge Waves, 1085

Source Control of Intrusions Along Horizontal Boundary, 495

Three-Dimensional Characteristics Model of Wind-Generated Turbulent Flow, 244

Fluid mechanics

Engineering Mechanics, 1245

Investigation of Zebra Mussel Adhesion Strength Using a Rotating Disk, 349

Fluidized bed processing

Modeling of Toxic Wastewater Treatment by Expanded-Bed Anaerobic GAC Reactors, 337

Softening by Fluidized Bed Crystallizers, 338

Fluidizing

Tackling Trapped Sediments, 1134

Velocity Gradient in Filter Backwashing, 353

Fluid-structure interaction

Probabilistic Description of Buffeting Response of Long-Span Bridges, 300

Probabilistic Description of Buffeting Response of Long-Span Bridges: II, 301

Flumes

Critical Depth Relations for Flow Measurement Design, 616

Measurement and Prediction of Surface Shear Stress in Annular Flume, 543

Small Parshall Flume Rating Correction, 514

Flushing

Model for Estimating Tidal Flushing of Small Embayments, 1117

Flutter

Finite Element-Based Flutter Analysis of Cable-Suspended Bridges, 843

Transverse Shear Effect on Flutter of Composite Panels, 47

SUBJECT INDEX

Fractures

Fluvial hydraulics

River Bed Degradation Due to Abrupt Outfall Lowering, 521

Fly ash

Chloride Binding Capacity in Cement-Fly-Ash Pastes, 673

Durability of MSW Fly-Ash Concrete, 699

Evaluation of Flowable Fly-Ash Backfill. I: Static Loading, 389

Evaluation of Flowable Fly-Ash Backfill. II: Dynamic Loading, 390

Fly-Ash Slurry Island: I. Theoretical and Experimental Investigations, 681

Fly-Ash Slurry Island: II. Construction in Hakucho Ohashi Project, 682

Interaction of Inorganic Leachate with Compacted Pozzolanic Fly Ash, 444

Mix Design for Flowable Fly-Ash Backfill Material, 690

Properties of Gypsum Wallboards Containing Fly Ash, 687

Strength and Corrosion Resistance of Superplasticized Concretes, 680

Foot bridges

Vibration of Pedestrian Overpass, 706

Footings

Cone Models for Soil Layer on Rigid Rock. II, 401

Effects of Footing Location on Bridge Pier Scour, 485

Elastic-Plastic Analysis of Footings on Anisotropic Soils, 388

Reinforced Sand Behavior Overlying Compressible Subgrades, 456

Force

Damage Diagnosis of Steel Frames Using Vibrational Signature Analysis, 271

Empirical Estimation of Double-Layer Repulsive Force between Two Inclined Clay Particles of Finite Length, 399

Interaction of Steep Waves with Vertical Walls, 1107

Foreign engineering

Underground Research: Here and There, 1229

Foreign firms

Improving International Competitiveness, 733

Foreign projects

Strategies in Risk Management of On-Demand Guarantees, 103

Forensic engineering

Research Needs Related to Forensic Engineering of Constructed Facilities, 704

Forests

Hydrologic Model for Drained Forest Watershed, 589

Sludge Loading Rates for Forest Land, 317

Formwork, construction

Knowledge Acquisition and Development for Formwork Selection System, 101

Neuroform—Neural Network System for Vertical Formwork Selection, 70

Fouling

Investigation of Zebra Mussel Adhesion Strength Using a Rotating Disk, 349

Foundation beams

Stability of Frames with Grade Beam and Soil Interaction, 161

Foundation construction

A Monumental Task, 1171

Foundation design

Reserve Capacity Design Method (RCDM) for Deepwater Piled Foundations, 1079

Foundation performance

Damage to Two Apartment Buildings Due to Moisture Variation of Expansive Soil, 718

Foundations

Ambient Temperature Effect in Concrete Dam Foundation Seepage, 368

Analysis of Laterally Loaded Shafts in Rock, 408

Backfill-Stiffened Foundation Wall Design, 465

The Caisson Solution, 1226

Constructability for Drilled Shafts, 94

Design of Socketed Drilled Shafts in Limestone, 455

Dynamic Experiments on Two Pile Groups, 395

Elastic Solutions for Arbitrarily Shaped Foundations, 414

Engineering Issues for Early Lunar-Based Telescopes, 38

Exchange Place Station Subsurface Reconstruction and Improvements, 100

Identification of Soil Properties from Foundation Impedance Functions, 406

Nonlinear Modeling of Truss-Plate Joints, 897

Regolith Mechanics, Dynamics, and Foundations, 30

Walking of Flatwork on Expansive Soils, 708

Fourier series

Boundary-Continuous Fourier Solution for Clamped Mindlin Plates, 239

Stiffened Sheathings of Orthotropic Cylindrical Shells, 808

Fracture mechanics

Compression Failure of Quasibrittle Material: Nonlocal Microplane Model, 186

Determination of Critical *J*-Integral for Wood, 854

Determination of Fracture Toughness for Wood, 853

Fracture Analysis of Mortar-Aggregate Interfaces in Concrete, 276

Fracture Mechanics and Size Effect of Concrete in Tension, 936

Fracture-Based Two-Way Debonding Model for Discontinuous Fibers in Elastic Matrix, 294

Softening and Snap-Through Behavior of Reinforced Elements, 246

Stability Theory of Cohesive Crack Model, 189

Fracture strength

Determination of Critical *J*-Integral for Wood, 854

Determination of Fracture Toughness for Wood, 853

Fracture Toughness for Steel Fiber-Cement Paste Interfacial Zone, 688

Fractures

Analysis of Welded Tubular Connections Using Continuum Damage Mechanics, 803

Cracking and Debonding on Bimaterial Interface under Uniform Loading, 219

Fractures, materials

Fractures, materials

Flow-Deformation Response of Dual-Porosity Media, 374

Frame design

Inelastic Limit States Design. Part I: Planar Frame Studies, 898

Inelastic Limit States Design. Part II: Three-Dimensional Frame Study, 899

Framed structures

Approximating Lateral Stiffness of Stories in Elastic Frames, 770

Geometrical Imperfections on Inelastic Frame Behavior, 837

Hysteretic Response of Reinforced-Concrete Infilled Frames, 876

Incorporating Load Sharing in Shear Wall Design of Light-Frame Structures, 948

Nonlinear Finite-Element Model for Light-Frame Stud Walls, 933

Recorded Seismic Response of Pacific Park Plaza. II: System Identification, 846

Seismic Analysis Design of Frames with Viscoelastic Connections, 894

Seismic Response of Pacific Park Plaza. I: Data and Preliminary Analysis, 845

Stability of Frames with Grade Beam and Soil Interaction, 161

Frames

Bracing Requirements of Plane Frames, 844

Concurrent Optimization of Large Structures. I: Algorithms, 21

Concurrent Optimization of Large Structures. II: Applications, 22

Cyclic Behavior of Extended End-Plate Joints, 833

Frame Buckling Analysis with Full Consideration of Joint Compatibilities, 205

Geometrical Imperfections on Inelastic Frame Behavior, 837

Inelastic Limit States Design. Part I: Planar Frame Studies, 898

Modeling Slab Contribution in Frame Connections, 895

New Stability Equation for Columns in Braced Frames, 861

Reliability of Geometrically Nonlinear PR Frames, 285

Seismic Performance of Low-Rise Steel Perimeter Frames, 7

Short-Term Behavior of Pultruded Fiber-Reinforced Plastic Frame, 866

Framing

Peaches and Concrete, 1128

France

The Environment is Good Business in France, 1145

Free flow

About Moving Contact Lines, 198

Sluice-Gate Discharge Equations, 574

Free surfaces

About Moving Contact Lines, 198

Interaction of Steep Waves with Vertical Walls, 1107

Kinematics of Nonlinear Random Waves near Free Surface, 279

1992 ASCE TRANSACTIONS

Momentum and Energy Coefficients Based on Power-Law Velocity Profile, 563

Freeze-thaw cycle

Seasonal Soil Strength by Spectral Analysis of Surface Waves, 51

Freeze-thaw durability

Durability of MSW Fly-Ash Concrete, 699

Masonry Wall and Window System Leakage Investigation for University Building, 712

Permeability of Roller Compacted Concrete, 674

Freezing

Estimating Thaw-Strain Settlement of Frozen Fill, 59

Finite Element Analysis of Cold Embedments in Fresh Concrete, 52

Freight

Future Impact of Trucking Reform on Railway Revenue, 1015

Freight transportation

Future Impact of Trucking Reform on Railway Revenue, 1015

Rail Revival, 1118

Frequencies

Case Studies of Structures with Man-Induced Vibrations, 791

Frequency Domain Analysis of Undamped Systems, 197

Modal Synthesis Method for General Dynamic Systems, 241

Seismic Response of Pacific Park Plaza. I: Data and Preliminary Analysis, 845

Frequency

Frequency Domain Optimal Control of Wind-Excited Buildings, 303

Fundamental Frequency of Tapered Plates by Differential Quadrature, 225

Frequency distribution

Estimating Peak Flows from Small Agricultural Watersheds, 580

Frequency response

Flexibility by Multireference Impact Testing for Bridge Diagnostics, 879

Measured to the Max, 1216

Friction

Effects of Bottom Friction on Wave Breaking Using RCPWAVE Model, 1103

Effects of Porous Bed on Turbulent Stream Flow above Bed, 540

Motion of Contact-Load Particles at High Shear Stress, 568

Slip Behavior of Cable against Saddle in Suspension Bridges, 777

Wire Recovery Length in Suspension Bridge Cable, 942

Friction factor

Dimensionally Homogeneous Manning's Formula, 548

Modern Approach to Design of Grassed Channels, 623

- Friction resistance**
 - Frictional Resistance of Overland Flow on Tropical Turfed Slope, 481
- Frost penetration**
 - Protected-Paste Volume of Air-Entrained Cement Paste. Part I, 684
- Froude number**
 - Influences of Density on Circular Clarifiers with Baffles, 357
- Momentum and Energy Coefficients Based on Power-Law Velocity Profile, 563**
- Frozen soils**
 - Design Method for Frozen-Soil Retaining Wall, 54
 - Flexural Strength of Sand-Reinforced Ice, 3
 - Temperature-Independent Relationships for Frozen Soils, 50
- Fuels**
 - Diesel as Case of Consumer Choice in Alternative Transport Fuels, 145
 - Engineering-Econometric Model of Energy Demand, 146
- Full-scale tests**
 - Analysis and Design Models for Structural Concrete Bridge Deck Overlays, 8
 - Dynamic Response Analysis of Reinforced-Soil Retaining Wall, 426
 - Horizontal Load Transfer in Structural Concrete Bridge Deck Overlays, 9
 - Inverse Analysis of Geotechnical Parameters on Improved Soft Bangkok Clay, 419
 - Measured to the Max, 1216
 - Modified Stub-Girder Floor System: Full-Scale Tests, 939
 - Performance of Test Embankment Constructed to Failure on Soft Marine Clay, 369
- Functional analysis**
 - Elastic Buckling of Rectangular Plates with Curved Internal Supports, 841
 - Systems-Engineering Methodology for Engineering Planning Applications, 734
- Funding allocations**
 - PMSC: Pavement Management System for Small Communities, 984
- Furrow irrigation**
 - Furrow Flow Velocity Effect on Hydraulic Roughness, 643
 - Hydrodynamic Furrow Irrigation Model with Specified Space Steps, 603
 - Two-Dimensional Analysis of Furrow Infiltration, 627
- Furrow systems**
 - Mathematical Zero-Inertia Modeling of Surface Irrigation: Advance in Furrows, 571
- Fuzzy sets**
 - Design-Basis Flood for Rehabilitation of Existing Dams, 486
 - Mapping Slope Failure Potential Using Fuzzy Sets, 391
 - Rationalizing Water Requirements with Aid of Fuzzy Allocation Model, 1055
- Scheduling Demand-Responsive Transportation Vehicles Using Fuzzy-Set Theory, 993**
- Selection of Design/Build Proposal Using Fuzzy-Logic System, 108**
- Unified Pavement Distress Index for Managing Flexible Pavements, 1012**
- Gabions**
 - Flow and Energy Dissipation Over Stepped Gabion Weirs, 507
 - Gabions and Geogrids, 1201
- Gasoline**
 - Electroosmotic Removal of Gasoline Hydrocarbons and TCE From Clay, 310
- Gates**
 - Design of Control Algorithm for Operation of Irrigation Canals, 632
 - Sluice-Gate Discharge Equations, 574
 - Transients in Canal Network, 620
- Gaussian process**
 - Load-Space Formulation for Time-Dependent Structural Reliability, 204
 - Response of Systems with Uncertain Parameters to Stochastic Excitation, 213
- Geodesy**
 - Beyond Push-Button GPS, 1175
 - Delineating Theory for GPS Surveying, 960
- Geographic information systems**
 - Computing in Civil Engineering and Geographic Information Systems Symposium, 1239
 - Construction Applications of Relational Data Bases in Three-Dimensional GIS, 64
 - GIS: New York's Pipe Dream, 1136
 - GPS/Positioned Digital Video for Airborne GIS Data Acquisition, 963
 - Hydrologic Parameter Estimation Using Geographic Information System, 1066
 - Integrating Facility Delivery through Spatial Information, 1025
 - LGG System for Emergency Response Applications, 964
 - Shortest Path Within Polygon and Best Path Around or through Barriers, 1029
 - Sludge Loading Rates for Forest Land, 317
 - Small Utility GIS, 1223
 - Water's New World, 1168
- Geoid**
 - Orthometric Heights from Global Positioning System, 962
- Geology**
 - Stability Analysis in Geomechanics by Linear Programming. I: Formulation, 458
- Geometry**
 - Geometric Characterization of Road Humps for Speed-Control Design, 1007
 - Geometric Modeling of Inflatable Structures for Lunar Base, 37
 - Geometrical Imperfections on Inelastic Frame Behavior, 837
 - Optimum Geometries for Pier-Type Airport Terminals, 979

Geosynthetics

- Dynamic Interface Shear Strength Properties of Geomembranes and Geotextiles, 405
- Grouting, Soil Improvement and Geosynthetics, 1250
- Hydraulic Conductivity of Three Geosynthetic Clay Liners, 453
- Landfill-Cover Conflict, 1234
- Pullout Stiffness of Elastic Anchors in Slope Stabilization Systems, 412

Geotechnical engineering

- Biotechnical Stabilization of Highway Cut Slope, 443
- Computational Laboratory for Discrete Element Geomechanics, 67
- Grouting, Soil Improvement and Geosynthetics, 1250
- Probabilistic Mechanics and Structural and Geotechnical Reliability, 1264
- Underground Research: Here and There, 1229

Geotechnical models

- Model Uncertainty Representation in Geotechnical Reliability Analyses, 384

Girders

- Buckling of Suspended Cambered Girders, 784
- Manufactured Wood Joists—Noncollapse Failure, 709
- Parametric Study of Continuous Prestressed Composite Girders, 767
- Performance of Viaduct Girders under Static and Dynamic Loads, 711
- Static Response of Prestressed Girders with Openings, 783

Glass fibers

- Compressive Behavior of Glass-Fiber-Reinforced Polymer Concrete, 679

Glass plates

- Properties of PVB Interlayer Used in Laminated Glass, 677

Global positioning

- Beyond Push-Button GPS, 1175
- Delineating Theory for GPS Surveying, 960
- GPS/Positioned Digital Video for Airborne GIS Data Acquisition, 963
- Integrated GPS-INS for High-Accuracy Road Positioning, 965
- Laptop Automated Navigation Aid Positioning System with Differential GPS, 967
- LGG System for Emergency Response Applications, 964
- Orthometric Heights from Global Positioning System, 962

Gluing

- Reinforced Concrete Beams with Plates Glued to Their Soffits, 870

Goals

- Project Management: Keys to Success, 1153
- Reservoir Management and Thermal Power Generation, 1061

Government policies

- Elements of Effective State Land-Use Planning Policy, 1031

- Engineering-Econometric Model of Energy Demand, 146

- The Environment is Good Business in France, 1145

- Lessons Not Learned from 1989 Loma Prieta Earthquake, 736

Grade control structures

- Analysis of ARS Low-Drop Grade-Control Structure, 554

Graduate study

- Upgrading the First Professional Degree, 750

Grain size

- Hydraulic Conductivity of Noncohesive Soils, 439
- Incipient Motion during Static Armoring, 498
- Routing of Heterogeneous Sediments over Movable Bed: Model Development, 483
- Routing of Heterogeneous Sediments over Movable Bed: Model Verification, 484

Granular materials

- Compaction Quality Control in Granular Shell of Earth Dam, 433
- Elastoplastic Deformation for Particulates with Frictional Contacts, 254
- Explicit Equations of Motion of Discrete System of Disks in Two Dimensions, 264
- Mathematical Model for Piping, 415
- Micromechanics Modeling for Stress-Strain Behavior of Granular Soils. I: Theory, 472
- Micromechanics Modeling for Stress-Strain Behavior of Granular Soils. II: Evaluation, 473
- Shear-Band Analysis in Idealized Granular Material, 178
- Static Instability and Liquefaction of Loose Fine Sandy Slopes, 371
- Void Ratio of Noncohesive Soils and Similar Materials, 438

Granular media

- Dynamic Compaction Analysis, 425
- Dynamic Stresses in Granular Assemblies with Microstructural Defects, 165
- Membrane Compliance and Liquefaction of Sluiced Gravel Specimens, 409
- Reinforced Sand Behavior Overlying Compressible Subgrades, 456
- Strain-Softening Behavior of Granular Soil in Strain-Path Testing, 377

Graph theory

- Graph-Theory Approach to Eigenvalue Problem of Large Space Structures, 20
- State-Space Analysis and Control of Slow Transients in Pipes, 544

Graphical analysis

- Mechanism of Biological Treatment in Plug-Flow or Batch Systems, 344

Graphs, charts

- Design Charts for Timber Beam-Columns, 789

Grasses

- Frictional Resistance of Overland Flow on Tropical Turfed Slope, 481

Gravel

- Damage of Entryway Stairs due to Settlement of Gravel Backfill, 714

SUBJECT INDEX

Darcy-Weisbach Roughness Coefficients for Gravel and Cobble Surfaces, 578
 Hydraulic Conductivity of Noncohesive Soils, 439
 Mean Size Distribution of Bed Load on Goodwin Creek, 556
 Membrane Compliance and Liquefaction of Sluiced Gravel Specimens, 409
 Modeling Strength of Sandy Gravel, 413
Gravity
 Bed-Load Transport on Transverse Slope. I, 499
 Regolith Mechanics, Dynamics, and Foundations, 30
Gravity foundations
 Probabilistic Stability Analysis for Deep-Water Foundation, 386
Grease
 Winter Operability: Equipment Problems and Their Remedies, 57
Greens function
 Elastic Solutions for Arbitrarily Shaped Foundations, 414
Grid systems
 Effective Strength of 'Square-and-Diagonal' Double-Layer Grid, 760
 Gabions and Geogrids, 1201
 Pullout Tests Using Steel Grid Reinforcements with Low-Quality Backfill, 421
 Review of Equations of Conservation in Curvilinear Coordinates, 292
Ground support equipment
 Excavation and Support for the Urban Infrastructure, 1248
Ground water
 Analytical Solution of Steady Seepage into Double-Walled Cofferdams, 185
 Drawdown Solutions with Variable Drainable Porosity, 599
 Drawdowns for Nonleaky Aquifer Flow with Storage in Finite-Width Sink, 617
 Evaluation of Collection-Well Parameters for DNAPL, 316
 Flow-Deformation Response of Dual-Porosity Media, 374
 Movement of Nonpoint-Source Contaminants Through Heterogeneous Soils, 577
 Participative Process in Tube Well Irrigation Development, 634
 Quasi-Three-Dimensional Optimization Model of Jakarta Basin, 1037
 Review of Ground-Water Quality Monitoring Network Design, 477
 Sludge Loading Rates for Forest Land, 317
 Taming Environmental Data, 1192
 Vadose Zone Composite Hydraulic Conductivity, 629
Ground-water flow
 Comparative Survey of Four Unsaturated Soil Flow Equations, 512
 Drawdown Solutions with Variable Drainable Porosity, 599
 The Hopscotch Algorithm for Three-Dimensional Simulation, 492

Harbor engineering

Ground-water management
 Adaptive Control of Ground-Water Hydraulics, 1036
 Dual-System Cleanup, 1189
 Model for Prescribing Ground-Water Use Permits, 1069
 Systems Analysis in Ground-Water Planning and Management, 1049
Ground-water pollution
 Cleaning Up Chromium, 1146
 Dual-System Cleanup, 1189
 Grouting Against Hazwaste, 1165
 Migration of Chloroform in Aquifers, 315
 Movement of Nonpoint-Source Contaminants Through Heterogeneous Soils, 577
 Theory and Experiments on Subsurface Contaminant Sorption Systems, 326
Ground-water quality
 Dual-System Cleanup, 1189
 Grouting Against Hazwaste, 1165
 Nitrate Risk Management under Uncertainty, 1045
 Review of Ground-Water Quality Monitoring Network Design, 477
Grout
 Behavior of Partially Grout-Filled Damaged Tubular Members, 928
 Construction of Grout-Impregnated Fabric-Reinforced Pipes, 107
 Creep Recovery of Prepacked Aggregate Concrete, 695
Grout curtains
 Ambient Temperature Effect in Concrete Dam Foundation Seepage, 368
Grouting
 Effect of Particle Contact Bond on Shear Modulus, 430
 Flexural Tensile Strength of Partially Grouted Concrete Masonry, 950
 Grouting Against Hazwaste, 1165
 Grouting, Soil Improvement and Geosynthetics, 1250
Guidelines
 AASHTO Seismic Isolation Design Requirements for Highway Bridges, 772
 Guidelines for Design of Cable-Stayed Bridges, 1251
 Planning Your Negotiation, 660
Gulf of Mexico
 Tide and Storm Surge Predictions Using Finite Element Model, 551
Gypsum
 Properties of Gypsum Wallboards Containing Fly Ash, 687
Half space
 Cone Models for Homogeneous Soil. I, 400
 Stresses Induced by Surficial and Deep Loading in Elastic Medium, 432
Hangers
 The OCEA Awards of Merit, 1178
Harbor engineering
 Coastal Engineering Practice '92, 1237

Harbor facilities

Harbor facilities

Hong Kong Port Facilities, Airport, and Housing
Require New Concepts, 755

Harbors

Coastal Engineering Practice '92, 1237
Conflict of Interest in Deep-Draft Anchorage
Usage—Application of QT, 1082
Diversion Oil Booms in Current, 1114
Water-Level Oscillations in Esperance Harbour, 1101

Hazardous materials

Probabilistic Environmental Risk of Hazardous
Materials, 360

Hazardous waste

Effect of Collector Dosage on Metal Removal by Pre-
cipitation/Flotation, 363
Grouting Against Hazwaste, 1165

Hazardous waste sites

Coal-Gas Conundrum, 1140

Hazards

Acquisition of Expert Judgment: Examples from Risk
Assessment, 148

Head loss

Design of Trapezoidal Expansive Transitions, 575

Health hazards

Dealing with Uncertainty: From Health-Risk Assess-
ment to Environmental Decision Making, 144
Nitrate Risk Management under Uncertainty, 1045
Water, Endangered Ecosystem: Assessment of Chem-
ical Pollution, 335

Heat transfer

Predictions of Thermal Characteristics for Mixed
Porous Media, 685
Steady-State Nonlinear Heat Transfer in Multilay-
ered Composite Panels, 252

Heat treatment

Risk Consistent Estimate of Heat-Straightening
Applications. I: Plates, 951
Risk Consistent Estimate of Heat-Straightening
Applications. II: Beams, 952

Heating

Modeling of Soil Venting Processes to Remediate
Unsaturated Soils, 314
Winter Operability: Equipment Problems and Their
Remedies, 57

Heavy metals

Effect of Collector Dosage on Metal Removal by Pre-
cipitation/Flotation, 363
Metallurgical Residue for Solubilization of Metals
from Sewage Sludge, 355
Partitioning of Elements by Refuse Processing, 350

Height

Orthometric Heights from Global Positioning Sys-
tem, 962

High occupancy vehicles

HOV Lessons, 1204

High strength concretes

Normal- and High-Strength Fiber-Reinforced Con-
crete under Compression, 702

1992 ASCE TRANSACTIONS

Rate Effects in Uniaxial Dynamic Compression of
Concrete, 160

High strength steel

Fatigue of Welded Cruciforms Subjected to Narrow-
Band Loadings, 172
Parametric Study of Continuous Prestressed Com-
posite Girders, 767

High technology

Technology is Here—Are You Ready?, 661

Highway construction

The Evolution of an Environmental Monitor, 1170
The Last Freeway, 1162
Life in the Fast Track, 1150
Transportation for Hong Kong Requires Solutions to
Issues and Problems, 748

Highway design

Exact Minimum Sight Distance on Sag Curve with
Centered Overpass, 1006
Highway Design in 3-D, 1173
Reexamination of Directional Distribution of High-
way Traffic, 988
Steering Clear of Tort Claims, 1179

Highway engineering

Steering Clear of Tort Claims, 1179

Highway improvements

Procedures for Estimating Accident Reductions on
Two-Lane Highways, 975

Highway planning

Reexamination of Directional Distribution of High-
way Traffic, 988

Highway safety

Aspects of Road-Accident Death Analyses, 986
Estimating Truck's Critical Cornering Speed and Fac-
tor of Safety, 976

Highway structures

Structural Evaluation of Box Culverts, 945

Highways

Discharge Capacity for Curb-Opening Inlets, 529
Estimating Truck's Critical Cornering Speed and Fac-
tor of Safety, 976
The Last Freeway, 1162
Planning for Movement of Very Large, Slow-Moving
Vehicles, 992
Procedures for Estimating Accident Reductions on
Two-Lane Highways, 975
The Roads Ahead, 1152
Statistical Evaluation of Truck Overloads, 1010

Hinges

Moving Hinge in Large-Displacement Problems, 263

Historic sites

Retrofitting a Landmark, 1132

History

Engineering a Monument, Evoking a Nightmare,
1130

Holes

Constant Hole-Spacing Trail Tubes, 583
Novel Photoelastic Approach in Analysis of Elliptical
Holes in Thick Plates, 250

Hollow sections

Behavior of Concrete Hollow-Block Masonry Prisms under Axial Compression, 855

Square and Rectangular Hollow Sections Subject to Combined Actions, 792

Hong Kong

Hong Kong Port Facilities, Airport, and Housing Require New Concepts, 755

Many Engineering Issues and Challenges Met in Development of Hong Kong, 731

Resolving Construction Disputes by Mediation: Hong Kong Experience, 671

Transportation for Hong Kong Requires Solutions to Issues and Problems, 748

Horizontal loads

Analysis and Design Models for Structural Concrete Bridge Deck Overlays, 8

Horizontal Load Transfer in Structural Concrete Bridge Deck Overlays, 9

Hot dry rock

Novel Combined-Cycle Low-Temperature Engine System, 153

Hot weather construction

Strength and Shrinkage of Natural Pozzolanic Mortar in Hot Weather, 683

Housing

Hong Kong Port Facilities, Airport, and Housing Require New Concepts, 755

Housing America in the Twenty-First Century, 1254

Hudson River

Model of Fate and Accumulation of PCB Homologues in Hudson Estuary, 14

Human behavior

Case Studies of Structures with Man-Induced Vibrations, 791

Design Live Loads for Coherent Crowd Harmonic Movements, 821

Tuned Mass Dampers for Balcony Vibration Control, 797

Tuned Mass Dampers to Control Floor Vibration from Humans, 798

Human factors

Identification of Inappropriate Driving Behaviors, 985

Hydraulic conductivity

Analysis of Recharge in Anisotropic, Layered, Saturated-Unsaturated Soil, 612

Effects of Freezing on Hydraulic Conductivity of Compacted Clay, 423

Evaluation of Collection-Well Parameters for DNAPL, 316

Hydraulic Conductivity of Noncohesive Soils, 439

Hydraulic Conductivity of Three Geosynthetic Clay Liners, 453

Including Uncertainty of Hydraulic Conductivity into Drainage Design, 624

Hydraulic design

Hydraulic Design of Perforated Breakwaters, 1077

Hydraulic engineering

Hydraulic Engineering: Saving a Threatened Resource—In Search of Solutions, 1255

Influence of Liquid Length Variation in Hydraulic Transients, 566

Hydraulic gradients

Conversion Between Quadratic and Power Law for Non-Darcy Flow, 513

Hydraulic jump

1-D Open-Channel Flow Simulation Using TVD-McCormack Scheme, 550

Source Control of Intrusions Along Horizontal Boundary, 495

Hydraulic models

Proposed Similarity Law for Surface Velocity in Hydraulic Models, 547

Sampling of Wastewater Effluent, 318

Water's New World, 1168

Hydraulic pressure

Protected-Paste Volume of Air-Entrained Cement Paste. Part 1, 684

Hydraulic roughness

Dimensionally Homogeneous Manning's Formula, 548

Hydraulic Roughness Coefficients for Native Rangelands, 626

Modern Approach to Design of Grassed Channels, 623

Hydraulic structures

Analysis of ARS Low-Drop Grade-Control Structure, 554

Design of Trapezoidal Expansive Transitions, 575

Optimal Irrigation Delivery System Design under Uncertainty, 602

Stiffened Sheathings of Orthotropic Cylindrical Shells, 808

Hydraulic transients

Influence of Liquid Length Variation in Hydraulic Transients, 566

Hydraulics

Adaptive Control of Ground-Water Hydraulics, 1036

Bayesian Inference for Feedback Control. II: Surface Irrigation Example, 601

Beginning of Motion for Selected Unanchored Residue Materials, 614

Computation Method for Regulating Unsteady Flow in Open Channels, 619

Conceptual Bed-Load Transport Model and Verification for Sediment Mixtures, 535

Constant Hole-Spacing Trail Tubes, 583

Darcy-Weisbach Roughness Coefficients for Gravel and Cobble Surfaces, 578

Drawdowns for Nonleaky Aquifer Flow with Storage in Finite-Width Sink, 617

Evaluation of Supercritical/Subcritical Flows in High-Gradient Channel, 533

Flow Field Induced by Sea Waves Over Brick-Pattern Ripples, 541

Furrow Flow Velocity Effect on Hydraulic Roughness, 643

Future Trends and Needs in Hydraulics, 564

Hydraulic Engineering: Saving a Threatened Resource—In Search of Solutions, 1255

Hydroturbine Cavitation Erosion, 152

Linking Data Bases to Hydraulic Computations, 63

Modeling Shallow Overland Flow in Surface Irrigation, 586

Optimization-Availability-Based Design of Water-Distribution Networks, 494

Seattle Swings Again, 1177

Seepage Optimization for Trapezoidal Channel, 607

Vadose Zone Composite Hydraulic Conductivity, 629

Wave-Motion Stability in Canals with Automatic Controllers, 565

Hydrocarbons

Electroosmotic Removal of Gasoline Hydrocarbons and TCE From Clay, 310

Hydrodynamics

Controlling Pulsed Incompressible Flow, 140

Efficiency of Jet Mixing of Temperature-Stratified Water, 328

Modeling Vertical Structure of Open-Channel Flows, 534

Parametric Study of Seismic Soil-Tank Interaction. I: Horizontal Excitation, 800

Parametric Study of Seismic Soil-Tank Interaction. II: Vertical Excitation, 801

Rapidly Varied Flow Analysis of Undular Bore, 1105

Review of Equations of Conservation in Curvilinear Coordinates, 292

Three-Dimensional Characteristics Model of Wind-Generated Turbulent Flow, 244

Water-Quality Modeling for Decision Making, 1054

Hydroelectric power

Research/Application of System Engineering to Water Resources Systems, 1057

Hydroelectric power generation

Aggregation-Disaggregation Approach to Multireservoir Operation, 1063

Hydroturbine Cavitation Erosion, 152

Innovative Reregulation Weirs, 1163

Issues in Hydropower Modeling Using GEMSLP Algorithm, 1039

Operation of Large Multireservoir Systems Using Optimal-Control Theory, 1060

Hydroelectric powerplants

Guidelines for Rehabilitation of Civil Works of Hydroelectric Plants, 1252

Nonlinear Stability of Differential Surge Chambers, 560

Optimization of Real-Time Hydrothermal System Operation, 1074

Water-Level Control in Hydropower Plants, 151

Hydrogeology

Review of Ground-Water Quality Monitoring Network Design, 477

Hydrographs

Darcy-Weisbach Roughness Coefficients for Gravel and Cobble Surfaces, 578

Impact of Flow Variability on Error in Estimation of Tributary Mass Loads, 331

Numerical Solution of Muskingum Equation, 515

Hydrologic aspects

Design-Basis Flood for Rehabilitation of Existing Dams, 486

Hydrologic models

Hydrologic Model for Drained Forest Watershed, 589

Hydrologic Parameter Estimation Using Geographic Information System, 1066

Nonparametric Framework for Long-Range Streamflow Forecasting, 1041

Precision of Evapotranspiration Estimates Using a Neutron Probe, 638

Hydrology

Adaptive Parameter Estimation for Multisite Hydrologic Forecasting, 539

Analysis of Evaporative Flux Data for Various Climates, 613

Conceptual Basis of Seasonal Streamflow Time Series Models, 538

Effects of Drainage and Water-Management Practices on Hydrology, 628

Hydraulic Engineering: Saving a Threatened Resource—In Search of Solutions, 1255

Hydrologic Model for Drained Forest Watershed, 589

Hydrologic Parameter Estimation Using Geographic Information System, 1066

New Look at Regional Flood-Frequency Relations for Arid Lands, 518

Surface and Subsurface Drainage of Metropolitan City in Arid Zone, 572

Systems Analysis Applications at Hydrologic Engineering Center, 1051

Water-Balance Model of Two Conservancies in Guyana, 606

Hydrostatic pressure

Wire Recovery Length in Suspension Bridge Cable, 942

Hyperbolic parabolic shells

Hypar Shell on Pasternak Foundation, 230

Hysteresis

Axial and Free-Bending Analysis of Spiral Strands Made Simple, 296

Energy Dissipation in Determinate Steel Beams, 757

Energy Dissipation in Indeterminate Steel Beams, 758

Inelastic Response of Variable Stiffness Members under Cyclic Loading, 236

Hysteresis models

Hysteretic Behavior of Anchorage Slip in R/C Members, 893

Hysteretic systems

Aseismic Hybrid Control of Nonlinear and Hysteretic Structures I, 237

Aseismic Hybrid Control of Nonlinear and Hysteretic Structures II, 238

Control of Hysteretic System Using Velocity and Acceleration Feedbacks, 290

I beams

Straight, Single-Tapered Composite I-Beams of Orthotropic Materials, 701

Ice

Constitutive Model for Ice, 170

Estimating Thaw-Strain Settlement of Frozen Fill, 59

Flexural Strength of Sand-Reinforced Ice, 3

Pressure of Crushed Ice as Mohr-Coulomb Material Against Flat, Axisymmetric Indenter, 58

Ice cover

- Coupled Vertical and Horizontal Galloping, 159
- Microorganism Survival in Ice-Covered Marine Environment, 53

Ice forces

- Ice Loads on Vertical Bridge Pier at Two Different Model Scales, 55

Ice loads

- Ice Loads on Vertical Bridge Pier at Two Different Model Scales, 55

Identification

- Identification of Soil Properties from Foundation Impedance Functions, 406
- Modal and Wave Load Identification by ARMA Calibration, 228
- Modal Identification Algorithm with Unmeasured Input, 45
- Recorded Seismic Response of Pacific Park Plaza. II: System Identification, 846
- Testing Photoelectric Sensor System to Classify Vehicles, 998

Illinois

- Performance Evaluation of Lake Shelbyville by Stochastic Dynamic Programming, 1047
- Turning on the Waterworks, 1190

Image analysis

- Image-Processing Techniques Applied to Road Problems, 972
- Vehicle Classification Using Infrared Image Analysis, 981

Impact

- Assessing the Potential of E-Mail for Engineers: Case Study, 667
- Design of Bridge Pier Pile Foundations for Ship Impact, 877
- Evaluation of Impact Factors for Horizontally Curved Steel Box Bridges, 938
- Impact Analysis of Continuous Multigirder Bridges due to Moving Vehicles, 953
- Multivariable Analysis Using Isoparametric Finite Elements, 256

Impact forces

- Collisional Restitution Dependence on Viscosity, 211

Impact loads

- Prestressed-Concrete Railway-Bridge Live-Load Strains, 776

Impact tests

- Flexibility by Multireference Impact Testing for Bridge Diagnostics, 879

Impedance

- Rocking Impedance of Embedded Strip Foundations in Layered Soil, 407

Imperfections

- Buckling of Pressurized Axisymmetrically Imperfect Cylinders Under Axial Loads, 168
- Dynamic Elastic-Plastic Buckling Behavior Illustrated by Simple Model, 274
- Force Deformation Equations for Initially Curved Laterally Loaded Beam Columns, 229
- Geometrical Imperfections on Inelastic Frame Behavior, 837

- Study on Maximum Strength of Cold-Formed Steel Columns, 764

- Tolerance Limits for Geometric Imperfections in Hyperbolic Cooling Towers, 873

Impregnation

- Construction of Grout-Impregnated Fabric-Reinforced Pipes, 107

Impulsive loads

- Nonlinear Impulsive Motions of Low-Tension Cables, 202

In situ tests

- Geotechnical Investigation Strategies for Lunar Base, 29
- Stress-Strain-Strength Responses of Compressible Chicago Glacial Clays, 454

Incentives

- Financial Incentive Programs for Average-Size Construction Firm, 129
- Nonmonetary Incentives: It Can be Done, 647

Incineration

- Partitioning of Elements by Refuse Processing, 350

Incipient motion

- Incipient Motion during Static Armoring, 498

Inclusions

- Dynamic Stresses in Granular Assemblies with Microstructural Defects, 165

India

- Irrigation and Drainage—Systems Policy Analysis and India Case Study, 1064
- Model for Air Travel Demand, 991
- Rainfall Intensity-Duration-Frequency Formula for India, 488

Industrial wastes

- Activity of Biomass in RBC System Treating Pulp Industrial Wastewater, 351
- Effect of Collector Dosage on Metal Removal by Precipitation/Flotation, 363
- pH Control in Anaerobic Treatment of Industrial Wastewater, 340

Inelastic action

- Complete Biaxial Load-Deformation Behavior of RC Columns, 901
- Inelastic Amplification Factor for Design of Steel Beam-Columns, 859
- Inelastic Limit States Design. Part I: Planar Frame Studies, 898
- Inelastic Limit States Design. Part II: Three-Dimensional Frame Study, 899
- Nonlinear Cyclic Behavior of Reinforcing Bars Including Buckling, 943
- Shakedown Limit State of Compact Steel Girder Bridges, 812

Inertial surveys

- Integrated GPS-INS for High-Accuracy Road Positioning, 965

Infiltration

- Adaptation of Horton and SCS Infiltration Equations to Complex Storms, 591
- ALIVE (Advance Linear Velocity): Surface Irrigation Rate Balance Theory, 581

Equivalent Kostiaikov Parameters for SCS Infiltration Families, 585
 Horton Infiltration Equation Revisited, 630
 Interpretation of Kostiaikov Infiltration Parameters for Borders, 582
 Mathematical Zero-Inertia Modeling of Surface Irrigation: Advance in Furrows, 571
 Optimum Center-Pivot Irrigation System Design with Tillage Effects, 593
 Two-Dimensional Analysis of Furrow Infiltration, 627

Infiltration rate

Adaptation of Horton and SCS Infiltration Equations to Complex Storms, 591

Inflatable structures

Construction of Grout-Impregnated Fabric-Reinforced Pipes, 107
 Geometric Modeling of Inflatable Structures for Lunar Base, 37
 Mechanical Equipment Requirements for Inflatable Lunar Structures, 32

Inflow

Density Currents Entering Lakes and Reservoirs, 557
 Numerical Solution of Muskingum Equation, 515
 Predicting Sediment Loads, 1213

Information

Water Resource Systems Models: Their Role in Planning, 1048

Information management

NIAM Conceptual Data-Base Design in Construction Management, 62
 Transaction-Management Issues in Collaborative Engineering, 65

Information retrieval

Aspects of Virtual Master Builder, 745
 Construction Applications of Relational Data Bases in Three-Dimensional GIS, 64
 Hypertext and Claim Analysis, 133

Information system design

NIAM Conceptual Data-Base Design in Construction Management, 62

Information systems

Advanced Technology Applications in Chicago-Area Freeway Traffic Management Program, 997
 Aspects of Virtual Master Builder, 745
 Hypertext and Claim Analysis, 133
 Representing Building Product Information Using Hypermedia, 60
 Site-Level Construction Information System, 132
 Trend in Local Area Network Utilization, 646

Information theory

Information Theory in Risk Analysis, 361

Infrared detectors

Vehicle Classification Using Infrared Image Analysis, 981

Infrared photography

Rainfall Area Identification Using GOES Satellite Data, 584

Infrastructure

Critical Issues for Engineering Managers, 658

Emerging Issues in Transportation Facilities Management, 999

Excavation and Support for the Urban Infrastructure, 1248

Future Trends and Needs in Hydraulics, 564

The Heartbeat of the Artery, 1120

Lifeline Earthquake Engineering in the Central and Eastern U.S., 1259

Optimal Long-Term Scheduling of Bridge Deck Replacement and Rehabilitation, 987

Out with the Old, 1197

Pay As You Grow, 1135

Principles of Holistic Medicine Applied to Infrastructure Maintenance: A Test Case, 1126

Rehabilitation of Infrastructure in Infill Sites, 753

Small Systems Struggle, 1119

Water Resources Planning and Management: Saving a Threatened Resource—In Search of Solutions, 1275

Injuries

Role of Designers in Construction Worker Safety, 130

Injury rates

Efficacy of Drug Testing Programs Implemented by Contractors, 137

Innovation

A Challenge for Research, 115

Design-Build Goes Public, 1184

Education and Research in Japan's Construction Industry, 747

Evaluation of Advanced Construction Technology with AHP Method, 124

Flavors and Mixins of Expert Systems Technology Transfer Model for AEC Industry, 116

Government-Industry Cooperation: Fast-Track Concrete Innovation, 117

Grouting, Soil Improvement and Geosynthetics, 1250

Housing America in the Twenty-First Century, 1254

Innovative Reregulation Weirs, 1163

Noncontractual Methods of Integration on Construction Projects, 113

OCEA, American-Style, 1180

Strategies for Technology Push: Lessons from Construction Innovations, 120

Technology Transfer in Building Construction—Case of Seismic Design, 97

Transportation Planning and Air Quality, 1273

Use of Scrap Tires in Road Construction, 123

Inorganic contaminants

Interaction of Inorganic Leachate with Compacted Pozzolanic Fly Ash, 444

Inspection

Constructability for Drilled Shafts, 94

Defects in Aluminum Windows and Impact on Dust and Air Infiltration, 705

Systems Reliability Approach to Fatigue of Structures, 794

Installation

Loss of Ground During CFA Pile Installation in Inner Urban Areas, 416

Instrumentation

- Analysis of Behavior of Earth Dam Using Strong-Motion Earthquake Records, 381
- Effect of Tire Parameters on Pavement Damage and Load-Equivalency Factors, 1019
- Field Instrumentation and Performance Monitoring of Rigid Pavements, 990
- Road and Airport Pavement Response Monitoring Systems, 1267
- Smart Structures, 1222

Insulation

- Microbiologically Induced Corrosion, 1161

Integral equations

- Rapidly Varied Flow Analysis of Undular Bore, 1105

Intelligent vehicle highway systems

- LGG System for Emergency Response Applications, 964

Interaction models

- Cable-Stayed Bridge Vibration Due to Road Surface Roughness, 834
- Feedback Mechanisms for Operational Simulation, 69

Interactions

- Component Wave Interactions and Irregular Wave Kinematics, 1104
- Interaction of Steep Waves with Vertical Walls, 1107
- Issues in Developing Control Zones for International Space Operations, 42
- Re-examination of Ylinen and Other Column Equations, 908

Interactive graphics

- Computational Laboratory for Discrete Element Geomechanics, 67
- Computer Graphics in Detailing Strut-Tie Models, 72
- Highway Design in 3-D, 1173
- Object-Oriented Finite Element and Graphics Data-Translation Facility, 77
- Taming Environmental Data, 1192
- Water-Quality Modeling for Decision Making, 1054

Interactive systems

- Cranes, Concrete, Construction...and Computers, 1167
- Integrated Pavement Management System for Kennedy International Airport, 1011
- Object-Oriented Approaches for Integrated Engineering Design Systems, 74
- Object-Oriented Finite Element and Graphics Data-Translation Facility, 77
- Solid Modeling of RC Beams: 2. Computational Environment, 82
- Transaction-Management Issues in Collaborative Engineering, 65
- Water's New World, 1168

Interchanges

- Actuated Traffic Signal Control at Diamond Interchange, 994
- Change Intervals and Lost Time at Single-Point Urban Interchanges, 1009

Interconnected systems

- LGG System for Emergency Response Applications, 964

Interface shear

- Dynamic Interface Shear Strength Properties of Geomembranes and Geotextiles, 405
- Micromechanics-Based Constitutive Model for Interface Shear, 231

Interfaces

- Analysis and Implementation of Thin-Layer Element for Interfaces and Joints, 302
- Antiplane Problems of Monoclinic Material, 259
- Cracking and Debonding on Bimaterial Interface under Uniform Loading, 219
- Exact Formulation of Axisymmetric-Interface-Element Stiffness Matrix, 435
- Fracture Analysis of Mortar-Aggregate Interfaces in Concrete, 276
- Fracture Toughness for Steel Fiber-Cement Paste Interfacial Zone, 688
- Hierarchical Single-Surface Model for Static and Cyclic Behavior of Interfaces, 212
- Source Control of Intrusions Along Horizontal Boundary, 495

Internal pressure

- Buckling of Pressurized Axisymmetrically Imperfect Cylinders Under Axial Loads, 168

International compacts

- Equity and International Agreements for CO₂ Containment, 147
- Issues in Developing Control Zones for International Space Operations, 42

International development

- Housing America in the Twenty-First Century, 1254

International factors

- Critical Issues for Engineering Managers, 658
- Improving International Competitiveness, 733
- Issues in Developing Control Zones for International Space Operations, 42
- Practitioner Involvement with Engineering Ethics and Professionalism, 729

Interpolation

- Low-Order Interpolation Functions for Curved Beams, 174

Interstate highways

- The Evolution of an Environmental Monitor, 1170
- The Heartbeat of the Artery, 1120

Intrusion

- Source Control of Intrusions Along Horizontal Boundary, 495

Iron

- TOC Removal by Coagulation and Softening, 333
- Turning on the Waterworks, 1190

Irrigation

- Cost Models for Preliminary Economic Evaluation of Sprinkler Irrigation Systems, 625
- Decision Support System for Crop Planning during Droughts, 588
- Equation for Evaporation Pan to Evapotranspiration Conversions, 642

- Equivalent Kostiakov Parameters for SCS Infiltration Families, 585
- Flow Capacity through Wide and Submerged Vegetal Channels, 622
- High Frequency Basin Irrigation Design for Upland Crops in Rice Lands, 611
- Irrigation and Drainage—Systems Policy Analysis and India Case Study, 1064
- Irrigation, Drainage, and Landscaping for Expansive Soil, 592
- Irrigation Land Management Model, 637
- Momentum Model of Flow Past Weir, 644
- Operation of Large Multi-reservoir Systems Using Optimal-Control Theory, 1060
- Reuse Simulation in Irrigated River Basin, 631
- Stochastic Model for Soil Moisture Deficit in Irrigated Lands, 608
- Surface and Subsurface Drainage of Metropolitan City in Arid Zone, 572
- Transients in Canal Network, 620
- Water-Balance Model of Two Conservancies in Guyana, 606
- Irrigation districts**
- Planning Simulation Model of Irrigation District, 576
- Irrigation efficiency**
- Constant Hole-Spacing Trail Tubes, 583
- Field-Measured Hydraulic Resistance Characteristics in Vegetation-Infested Canals, 590
- Irrigation Land Management Model, 637
- Optimization Model for Alternative Use of Different Quality Irrigation Waters, 587
- Working Conditions of Sprinkler to Optimize Application of Water, 635
- Irrigation engineering**
- Identification of Control System for Canal with Night Storage, 597
- Interpretation of Kostiakov Infiltration Parameters for Borders, 582
- Irrigation and Drainage: Saving a Threatened Resource—In Search of Solutions, 1257
- Irrigation practices**
- Irrigation and Drainage—Systems Policy Analysis and India Case Study, 1064
- Planning Simulation Model of Irrigation District, 576
- Irrigation scheduling**
- Irrigation Timing for Wheat Based on Climate, Crop, and Soil Data, 598
- Modeling Irrigation Schedules for Lowland Rice with Stochastic Rainfall, 573
- Irrigation systems**
- Constant Hole-Spacing Trail Tubes, 583
- Design of Control Algorithm for Operation of Irrigation Canals, 632
- Feedback Control of Basin-Irrigation System, 605
- Irrigation Land Management Model, 637
- Optimal Irrigation Delivery System Design under Uncertainty, 602
- Optimization Model for Alternative Use of Different Quality Irrigation Waters, 587
- Participative Process in Tube Well Irrigation Development, 634

- Irrigation water**
- Design and Operation of On-Farm Irrigation Ponds, 618
- Evapotranspiration and Irrigation Water Requirements, 2
- Isolators**
- Seismic Analysis Design of Frames with Viscoelastic Connections, 894
- Isotropic material**
- Mechanics of Shape Optimization in Plate Buckling, 227
- Isotropy**
- Strain-Based Constitutive Model with Mixed Evolution Rules for Concrete, 223
- Iteration**
- The Hopscotch Algorithm for Three-Dimensional Simulation, 492
- Japan**
- Education and Research in Japan's Construction Industry, 747
- Settling Down Easy, 1235
- Underground Research: Here and There, 1229
- Jet grouting**
- Mining for Building Expansion, 1227
- Minipile Milestone in Memphis, 1196
- Joint ventures**
- Managing and Motivating People on a Joint Venture Project, 668
- Joints**
- Analysis and Design of Doweled Slab-on-Grade Pavement Systems, 1016
- Analysis and Implementation of Thin-Layer Element for Interfaces and Joints, 302
- Effect of Contraction Joints on Earthquake Response of Arch Dam, 816
- Modeling Load-Slip Behavior of Nailed Joints, 700
- Nonlinear Modeling of Truss-Plate Joints, 897
- Reliability of Bolted Wood Connections, 949
- Seismic Behavior and Shear Strength of Framed Joint Using Steel-Fiber Reinforced Concrete, 775
- Joints, bolted**
- Cyclic Behavior of Extended End-Plate Joints, 833
- Effective Strength of 'Square-and-Diagonal' Double-Layer Grid, 760
- Joists**
- Manufactured Wood Joists—Noncollapse Failure, 709
- Jordan**
- Accessibility of Public Services in Irbid, Jordan, 1024
- Kalman filter**
- Adaptive Parameter Estimation for Multisite Hydrologic Forecasting, 539
- Integrated GPS-INS for High-Accuracy Road Positioning, 965
- Kaolin**
- Phenol Removal from Kaolinite by Electrokinetics, 466
- Kentucky**
- Tomorrow's Schools, 1123

Kinematics

- Component Wave Interactions and Irregular Wave Kinematics, 1104
- Integrated GPS-INS for High-Accuracy Road Positioning, 965
- Kinematics of 2-D Transient Water Waves Using Laser Doppler Anemometry, 1087
- Kinematics of Nonlinear Random Waves near Free Surface, 279
- Stability Analysis in Geomechanics by Linear Programming. I: Formulation, 458
- Stability Analysis in Geomechanics by Linear Programming. II: Application, 459
- Strain-Based Constitutive Model with Mixed Evolution Rules for Concrete, 223

Kinetics

- Electrokinetic Cleanups, 1211
- Thermodynamic Model of Nitrification Kinetics, 341

Knowledge acquisition

- Building KBES for Diagnosing PC Pile With Inductive Learning, 71
- Knowledge Acquisition and Development for Formwork Selection System, 101
- Knowledge Acquisition in Civil Engineering, 1258

Knowledge-based systems

- Building KBES for Diagnosing PC Pile With Inductive Learning, 71
- Expert System for Anaerobic-Digestion-Process Operation, 364
- Expert System for Construction Safety. II: Knowledge Base, 723
- Expert Systems for Civil Engineers: Knowledge Representation, 1249
- Knowledge Acquisition in Civil Engineering, 1258
- Knowledge-Based Advisory System for Public-Sector Design-Build, 85
- Knowledge-Based System for Design of Signalized Intersections, 982
- SightPlan Model for Site Layout, 135
- Site Event Advisor: Expert System for Contract Claims, 86
- Site-Layout Modeling: How Can Artificial Intelligence Help?, 125
- Traffic Signal Using Mixed Controller Operations, 1023

Kuwait

- Performance of Masonry Walls: Case Study in Kuwait, 678

Labor

- Comparison of Labor Productivity, 127
- Effects of Scheduled Overtime on Labor Productivity, 93

Laboratory tests

- Darcy-Weisbach Roughness Coefficients for Gravel and Cobble Surfaces, 578
- Design of Socketed Drilled Shafts in Limestone, 455
- Effect of Spoilers on Scour at Submarine Pipelines, 546
- Effects of Footing Location on Bridge Pier Scour, 485
- Estimation of Chloride Diffusion Coefficient and Tortuosity Factor for Mudstone, 420
- Evaluation and Control of Collapsible Soils, 447

- Factors Controlling Properties and Durability of Concretionary Laterite Gravel Aggregates, 676
- Fly-Ash Slurry Island: I. Theoretical and Experimental Investigations, 681
- Hierarchical Single-Surface Model for Static and Cyclic Behavior of Interfaces, 212
- Instrumenting the 'Y', 1217
- Laboratory Study of Oil Slick Subjected to Nearshore Circulation, 362
- Laboratory Testing of Ultimate Capacity of Dented Tubular Members, 818
- Laboratory versus Nondestructive Testing for Pavement Design, 980
- Local Scour at Bridge Abutments, 504
- Membrane Compliance and Liquefaction of Sluiced Gravel Specimens, 409
- Modeling Strength of Sandy Gravel, 413
- Nonlinear Water Waves Generated by Submarine and Aerial Landslides, 1096
- Performance of Masonry Walls: Case Study in Kuwait, 678
- Properties of Gypsum Wallboards Containing Fly Ash, 687
- Pullout Tests Using Steel Grid Reinforcements with Low-Quality Backfill, 421
- Simulating Solute Transport Using Laboratory-Based Sorption Parameters, 347
- Ultimate Loads of Continuous Composite Bridges, 902
- Weldment Design for RHS Truss Connections. II: Experimentation, 913
- Yielding of Mexico City Clay and Other Natural Clays, 417

Lagrangian functions

- Lagrangian Solution of St. Venant's Equations for Alluvial Estuary, 536

Lakes

- Density Currents Entering Lakes and Reservoirs, 557
- Efficiency of Jet Mixing of Temperature-Stratified Water, 328
- Integrated Assessment of Acid-Deposition Effects on Lake Acidification, 313
- Partitioning Phosphorus Loads: Implications for Lake Restoration, 1070
- Review of Equations of Conservation in Curvilinear Coordinates, 292
- Thermal Stratification Modeling of Lakes with Sediment Heat Flux, 493

Laminated wood

- Determination of Fracture Toughness for Wood, 853
- Modeling Horizontally Nail-Laminated Beams, 836

Laminates

- Analytical Solutions for Thick, Doubly Curved, Laminated Shells, 232
- Backfill-Stiffened Foundation Wall Design, 465
- Design/Control Optimization of Cross-Ply Laminates under Buckling and Vibration, 24
- Postbuckling Response Simulations of Laminated Anisotropic Panels, 40
- Simultaneous Design and Control of Stiffened Laminated Composite Structures, 23
- Thermomechanical Buckling of Multilayered Composite Plates, 175

Transverse Shear Effect on Flutter of Composite Panels, 47

Land acquisition

Price Effects of Landfills on Residential Land Values, 1034

Land application

Loss of PCBs from Municipal-Sludge-Treated Farmland, 10

Sludge Loading Rates for Forest Land, 317

Land development

Commercial Uses of Land Around Urban Railway Stations in Greece, 1033

The Greening of Greens, 1210

Impact Fees: Practical Guide for Calculation and Implementation, 1032

Pay As You Grow, 1135

Land reclamation

Drainage Efficiency of Sand Layer in Layered Clay-Sand Reclamation, 378

Land titles

Ecuador's Rural Cadasters and Land Titling Project (CATIR): Technical Process, 966

Land usage

Commercial Uses of Land Around Urban Railway Stations in Greece, 1033

Ecuador's Rural Cadasters and Land Titling Project (CATIR): Technical Process, 966

Elements of Effective State Land-Use Planning Policy, 1031

Multiple Subregion Allocation Models, 1026

Site Impact Traffic Assessment: Problems and Solutions, 1269

Land usage planning

Elements of Effective State Land-Use Planning Policy, 1031

Multiple Subregion Allocation Models, 1026

Landfills

Better Cover-Ups, 1160

Effects of Freezing on Hydraulic Conductivity of Compacted Clay, 423

Engineering Behavior of Water Treatment Sludge, 358

Landfill-Cover Conflict, 1234

Landfills: Anatomy of Automated Design, 1141

Optimal Scheduling of Consecutive Landfill Operations with Recycling, 332

Price Effects of Landfills on Residential Land Values, 1034

Taming Environmental Data, 1192

Two-Dimensional Leachate Estimation through Landfills, 487

Value Engineering at a Superfund Site, 1143

Landslides

Nonlinear Water Waves Generated by Submarine and Aerial Landslides, 1096

Steady-State Strength Analysis of Lower San Fernando Dam Slide, 387

Strength Correlation Factor for Residual Soils, 396

Tying Back a Landslide, 1225

Laplace transform

Dynamics of Saturated Rocks. IV: Column and Borehole Problems, 261

High Frequency Basin Irrigation Design for Upland Crops in Rice Lands, 611

River Bed Degradation Due to Abrupt Outfall Lowering, 521

Large structures

Graph-Theory Approach to Eigenvalue Problem of Large Space Structures, 20

Lateral loads

Analysis of Laterally Loaded Shafts in Rock, 408

Approximating Lateral Stiffness of Stories in Elastic Frames, 770

In-Plane Floor Deformations in RC Structures, 930

Modeling Load-Slip Behavior of Nailed Joints, 700
Modeling Slab Contribution in Frame Connections, 895

Prebuckling Deflections and Lateral Buckling. I: Theory, 922

Prebuckling Deflections and Lateral Buckling. II: Applications, 923

Slender Reinforced Concrete Bridge Towers under Cyclic Lateral Load, 6

Lateral pressure

Retaining Wall With Reinforced Cohesionless Backfill, 467

Laterites

Factors Controlling Properties and Durability of Concretionary Laterite Gravel Aggregates, 676

Lattice design

Force Deformation Equations for Initially Curved Laterally Loaded Beam Columns, 229

Launching

Method Proposed for Construction of Multispan Cable-Stayed Bridges, 106

Optimizing Launch-on-Time Probability, 41

Laws

In Too Deep, 1233

Resolving Contract Disputes Based on Misrepresentations, 118

Layered soils

Analysis of Recharge in Anisotropic, Layered, Saturated-Unsaturated Soil, 612

Rocking Impedance of Embedded Strip Foundations in Layered Soil, 407

Layered systems

AASHTO Direct Structural Capacity Method Error Analysis, 969

Drainage Efficiency of Sand Layer in Layered Clay-Sand Reclamation, 378

Properties of Aramid-Fiber Reinforced Concrete and SIFCON, 672

Rigid-Pavement Evaluation Using NDT—Case Study, 1002

Steady-State Nonlinear Heat Transfer in Multilayered Composite Panels, 252

Strength and Efficiency of Wood Box Columns, 796

Thermal Stresses in Bi-Coated Structures, 269

Layout

SightPlan Model for Site Layout, 135

SUBJECT INDEX

Linear programming

Site-Layout Modeling: How Can Artificial Intelligence Help?, 125

Leachates

Two-Dimensional Leachate Estimation through Landfills, 487

Leadership

ADR, TQM, Partnering, and Other Management Fantasies, 749

Collective Excellence: Building Effective Teams, 1238

Managing for Profit, 1224

Quality Management Organizations and Techniques, 96

Substitutes for Leadership and Unionized Construction Carpenters, 110

Leakage

The Great Chicago Flood of 1992, 1218

Leaks in Pipe Networks, 528

Masonry Wall and Window System Leakage Investigation for University Building, 712

Learning curve

Modeling and Simulating Learning Development in Construction, 131

Least squares method

Engineering Analysis of Extreme Value Data: Selection of Models, 1086

Equivalent Kostikov Parameters for SCS Infiltration Families, 585

Robust Testing Procedure for Detection of Multiple Blunders, 958

Left-turns

Saturation Flow and Capacity of Shared Permissive Left-Turn Lane, 1008

Legal factors

In Too Deep, 1233

SuperChange: Expert System for Analysis of Changes Claims, 114

Length

Optimal Linear Segmented Structures with Variable Segment Boundaries, 298

Velocity Distribution in Uniform Sediment-Laden Flow, 482

Wire Recovery Length in Suspension Bridge Cable, 942

Liability

In Too Deep, 1233

Risk Reduction Through Indemnification Contract Clauses, 662

Role of Designers in Construction Worker Safety, 130

Steering Clear of Tort Claims, 1179

Life cycles

Offshore Challenge, 1208

Pavement Performance and Life-Cycle Cost Analysis, 1

Lifeline systems

Lifeline Earthquake Engineering in the Central and Eastern U.S., 1259

Lift slab construction

Analysis of Stability of L'Ambiance Plaza Lift-Slab Towers, 721

Investigation of L'Ambiance Plaza Building Collapse, 720

Lifting

Comments on L'Ambiance Plaza Lifting Collar/Shearheads, 710

Lime

TOC Removal by Coagulation and Softening, 333

Limit analysis

Balanced Seismic Design of Anchored Retaining Walls, 410

Bracing Requirements of Plane Frames, 844

Limit design method

Bearing Capacity on Nonhomogeneous Cohesive Soils under Embankments, 424

Design of Bridge Pier Pile Foundations for Ship Impact, 877

Ductile Multiple-Anchor Steel-to-Concrete Connections, 850

Second-Order Inelastic Analysis Methods for Steel-Frame Design, 779

Shakedown Limit State of Compact Steel Girder Bridges, 812

Limit equilibrium

Discrete Element Method for Slope Stability Analysis, 468

Generalized Three-Dimensional Slope-Stability Analysis, 461

Retaining Wall With Reinforced Cohesionless Backfill, 467

Limit states

Analytical Aerodynamic Investigation of Cable-Stayed Helgeland Bridge, 765

Inelastic Limit States Design. Part I: Planar Frame Studies, 898

Inelastic Limit States Design. Part II: Three-Dimensional Frame Study, 899

Limit-State Interactions in Reliability-Based Design for Wood Structures, 802

Moisture Content and Reliability-Based Design for Wood Members, 955

Reliability of Geometrically Nonlinear PR Frames, 285

Shakedown Limit State of Compact Steel Girder Bridges, 812

Uncertainty and Reliability Analysis of Jacket Platform, 907

Wind-Induced Response of Structurally Asymmetric High-Rise Buildings, 768

Linear programming

Aggregation-Disaggregation Approach to Multireservoir Operation, 1063

Multiobjective Analysis of Multireservoir System, 1059

Optimal Pump Scheduling in Water-Supply Networks, 1062

Optimization Model for Alternative Use of Different Quality Irrigation Waters, 587

Stability Analysis in Geomechanics by Linear Programming. I: Formulation, 458

Stability Analysis in Geomechanics by Linear Programming. II: Application, 459

Linear systems

Optimal Linear Segmented Structures with Variable Segment Boundaries, 298

Liners

Effects of Freezing on Hydraulic Conductivity of Compacted Clay, 423

Interaction of Inorganic Leachate with Compacted Pozzolanic Fly Ash, 444

Linings

Fluctuating Uplift and Lining Design in Spillway Stilling Basins, 502

Liquefaction

Density Changes During Undrained Loading—Membrane Compliance, 470

Membrane Compliance and Liquefaction of Sluiced Gravel Specimens, 409

Piles Under Dynamic Loads, 1262

Static Instability and Liquefaction of Loose Fine Sandy Slopes, 371

Steady-State Strength Analysis of Lower San Fernando Dam Slide, 387

Undrained Shear Strength of Liquefied Sands for Stability Analysis, 460

Wave-Induced Effective Stress in Seabed and Its Momentary Liquefaction, 1091

Liquid limit

Equations for Compression Index Approximation, 376

Liquids

Control of Along-Wind Response of Structures by Mass and Liquid Dampers, 155

Evaluation of Collection-Well Parameters for DNAPL, 316

Theory and Experiments on Subsurface Contaminant Sorption Systems, 326

Litigation

Howdy, Partner, 1147

Resolving Contract Disputes Based on Differing—Site-Condition Clause, 136

Live loads

Design Live Loads for Coherent Crowd Harmonic Movements, 821

Effects of Dead Loads in Dynamic Plates, 759

Field Test of 72-in.-Diameter Cast-in-Place Nonreinforced Concrete Pipe, 968

Load combinations

Howe Truss Behavior Interpreted by Deflections, 716

Square and Rectangular Hollow Sections Subject to Combined Actions, 792

Load distribution

Classical Buckling Load of Spherical Domes Under Uniform Pressure, 243

Dynamic Response of Multigirder Bridges, 881

Stability of Column Lowered Into Liquid of Higher Density, 166

Ultimate Load Test of Slab-on-Girder Bridge, 848

Wheel Load Distribution in I-Girder Highway Bridges, 830

Load duration

Hygrothermal Effects on Load-Duration Behavior of Structural Lumber, 815

Load-Duration Effects in Structural Lumber: Strain Energy Approach, 888

Load factors

ASCE LRFD Method for Stainless Steel Structures, 817

Bolted Connections in Wood under Bending/Tension Loading, 813

Dynamic Elastic-Plastic Buckling Behavior Illustrated by Simple Model, 274

Guidelines for Design of Cable-Stayed Bridges, 1251

Inelastic Limit States Design. Part I: Planar Frame Studies, 898

Inelastic Limit States Design. Part II: Three-Dimensional Frame Study, 899

Load tests

Design of Socketed Drilled Shafts in Limestone, 455

Fine Ottawa Sand: Experimental Behavior and Theoretical Predictions, 469

Performance of Viaduct Girders under Static and Dynamic Loads, 711

Rate Effects in Uniaxial Dynamic Compression of Concrete, 160

Ultimate Load Test of Slab-on-Girder Bridge, 848

Water Penetration in Laterally Loaded Brick-Wall Panels, 703

Load tests, foundations

Large-Scale Loading Tests of Shallow Footings in Pneumatic Caisson, 457

Load transfer

Analysis and Design Models for Structural Concrete Bridge Deck Overlays, 8

Field Instrumentation and Performance Monitoring of Rigid Pavements, 990

Horizontal Load Transfer in Structural Concrete Bridge Deck Overlays, 9

Incorporating Load Sharing in Shear Wall Design of Light-Frame Structures, 948

Nonlinear Modeling of Truss-Plate Joints, 897

Loading

Fatigue Life of Offshore Steel Structures Under Stochastic Loading, 874

Fatigue of Welded Cruciforms Subjected to Narrow-Band Loadings, 172

High-Order Theory for Sandwich-Beam Behavior with Transversely Flexible Core, 214

Impact of Flow Variability on Error in Estimation of Tributary Mass Loads, 331

Stresses Induced by Surficial and Deep Loading in Elastic Medium, 432

Loads

Arc-Length Method for Passing Limit Points in Structural Calculation, 766

Bending of Thin Plate with Three-Point Support, 838

Classical Buckling Load of Spherical Domes Under Uniform Pressure, 243

Creep Recovery of Prepacked Aggregate Concrete, 695

Deflections of Beams with Varying Rectangular Cross Section, 282

SUBJECT INDEX

Management training

- Design Implications of Measured Pressures and Strains in Silos, 909
- Effect of Tire Parameters on Pavement Damage and Load-Equivalency Factors, 1019
- Guidelines for Design of Cable-Stayed Bridges, 1251
- Integrated Physical Model for Cylindrical Shells, 878
- Limiting Design Parameters for Accelerated Pavement-Testing System, 1018
- Load-Space Formulation for Time-Dependent Structural Reliability, 204
- Modal and Wave Load Identification by ARMA Calibration, 228
- Wheel Load Distribution in I-Girder Highway Bridges, 830
- Local area networks**
- Trend in Local Area Network Utilization, 646
- Local governments**
- Elements of Effective State Land-Use Planning Policy, 1031
- Pay As You Grow, 1135
- Small Systems Struggle, 1119
- Location**
- Effects of Footing Location on Bridge Pier Scour, 485
- Logic programming languages**
- Expert Systems for Civil Engineers: Knowledge Representation, 1249
- Statically Determinate Trusses Programmed in Logic, 84
- Long waves**
- Propagation of Long Waves Onto Shelf, 1080
- Low flow**
- Modeling Low-Flow Mixing through Pools and Riffles, 553
- Low-rise buildings**
- Seismic Performance of Low-Rise Steel Perimeter Frames, 7
- Lysimeters**
- Analysis of Evaporative Flux Data for Various Climates, 613
- Magnetic field effects**
- Destabilizing Effect of Magnetic Damping in Plate Strip, 163
- Magnetic levitation trains**
- A New Era In Transportation, 1148
- Maintenance**
- Guidelines for Rehabilitation of Civil Works of Hydroelectric Plants, 1252
- Participative Process in Tube Well Irrigation Development, 634
- Principles of Holistic Medicine Applied to Infrastructure Maintenance: A Test Case, 1126
- Small Systems Struggle, 1119
- Management**
- ADR, TQM, Partnering, and Other Management Fantasies, 749
- Collective Excellence: Building Effective Teams, 1238
- Comparison of Optimization Formulations for Waste-Load Allocations, 343
- Conflict Management Training for Today's Engineering Managers, 664
- Educational Needs of Civil Engineers in Management, 657
- Emerging Issues in Transportation Facilities Management, 999
- Flavors and Mixins of Expert Systems Technology Transfer Model for AEC Industry, 116
- Four Propositions for Quality Management of Design Organizations, 645
- Implementation of TQM in Building Design and Construction, 665
- Introduction to Ownership and Transition. I: Ownership Transfer Considerations, 669
- Introduction to Ownership and Transition. II: Succession and Firm Valuation, 670
- Irrigation Land Management Model, 637
- Issues in Hydropower Modeling Using GEMSLP Algorithm, 1039
- Management's Fatal Flaw: TQM Obstacle, 650
- Managing for Profit, 1224
- Modeling Bridge Deterioration with Markov Chains, 1020
- Planning Your Negotiation, 660
- Portrait of a Manager, 1191
- Professionalism: Cornerstone of Engineering, 744
- Quality Management Organizations and Techniques, 96
- Reservoir Management and Thermal Power Generation, 1061
- Substitutes for Leadership and Unionized Construction Carpenters, 110
- Thoughts on Management of Acquisitions, 651
- Trend in Local Area Network Utilization, 646
- Vertical Business Integration Strategies for Construction, 653
- Management methods**
- ADR, TQM, Partnering, and Other Management Fantasies, 749
- Financial Incentive Programs for Average-Size Construction Firm, 129
- Four Propositions for Quality Management of Design Organizations, 645
- Project Management Oversight—Good Tool for Program Managers, 659
- Quality Management Organizations and Techniques, 96
- Staffing Up for a Major Program, 1124
- Using Quality Circles to Raise Productivity and Quality of Work Life, 90
- Management planning**
- Introduction to Ownership and Transition. II: Succession and Firm Valuation, 670
- Management style**
- ADR, TQM, Partnering, and Other Management Fantasies, 749
- Management systems**
- Four Propositions for Quality Management of Design Organizations, 645
- Management training**
- Management's Fatal Flaw: TQM Obstacle, 650
- Portrait of a Manager, 1191

Managers

- Conflict Management Training for Today's Engineering Managers, 664
- Four Propositions for Quality Management of Design Organizations, 645

Portrait of a Manager, 1191

- Using Expert Systems to Manage Professional Survey Practices, 961

Manifolds

- Calculating Flow in Manifold and Orifice System, 342

Manpower

- Construction of Pressurized, Self-Supporting Membrane Structure on Moon, 34

Manufacturing

- Engineering Pre-engineered Buildings, 1199

Mapping

- GIS: New York's Pipe Dream, 1136
- GPS/Positioned Digital Video for Airborne GIS Data Acquisition, 963
- Mapping Slope Failure Potential Using Fuzzy Sets, 391
- Water's New World, 1168

Marine animals

- Investigation of Zebra Mussel Adhesion Strength Using a Rotating Disk, 349

Marine clays

- Moduli and Damping Factors of Soft Marine Clays, 441
- Performance of Test Embankment Constructed to Failure on Soft Marine Clay, 369

Marine plants

- Velocity Distribution Inside and Above Branched Flexible Roughness, 636

Marine terminals

- Ports '92, 1263

Markov chains

- Modeling Bridge Deterioration with Markov Chains, 1020

Markov process

- Parametric and External Excitation of Marine Risers, 209

Masonry

- Behavior of Concrete Hollow-Block Masonry Prisms under Axial Compression, 855
- Computed Versus Observed Seismic Response and Damage of Masonry Buildings, 858
- Computer-Controlled Brick Masonry, 68
- Earthquakes: A New Look at Cracked Masonry, 1219
- Effectiveness of Seismic Strengthening Techniques for Masonry Buildings, 863
- Masonry Wall and Window System Leakage Investigation for University Building, 712
- Out-of-Plane Seismic Response of Reinforced Masonry Walls, 896
- Performance of Masonry Walls: Case Study in Kuwait, 678
- Stability of Masonry Piers and Arches, 176
- Tomorrow's Schools, 1123

Mass transport

- The Hopscotch Algorithm for Three-Dimensional Simulation, 492

Materials

- FRP-Reinforced Wood as Structural Material, 694
- OCEA, American-Style, 1180
- Support Structures for High-Resolution Optical Systems, 17

Materials engineering

- Materials: Performance and Prevention of Deficiencies and Failures, 1260

Materials failure

- Airfield Pavement Creep Failure Investigation, 719
- Hygrothermal Effects on Mechanical Properties of Lumber, 787

- Materials: Performance and Prevention of Deficiencies and Failures, 1260

Materials, properties

- Behavior of Compacted Lunar Simulants Using New Vacuum Triaxial Device, 44
- Engineering Mechanics, 1245
- Factors Controlling Properties and Durability of Concretionary Laterite Gravel Aggregates, 676
- Fiber: Good For the Concrete Diet?, 1157
- Materials: Performance and Prevention of Deficiencies and Failures, 1260
- Properties of PVB Interlayer Used in Laminated Glass, 677
- Structural Fire Protection, 1271
- Variations in Measured Resilient Modulus of Asphalt Mixes, 697

Materials testing

- A European Road Comes to the U.S., 1159
- Fiber: Good For the Concrete Diet?, 1157
- Limiting Design Parameters for Accelerated Pavement-Testing System, 1018
- Materials: Performance and Prevention of Deficiencies and Failures, 1260
- Properties of Aramid-Fiber Reinforced Concrete and SIFCON, 672
- Put to the Test, 1231
- Safety and Service Life of Equipment Designed for Cold Climate Operation, 56

Materials tests

- Rate Effects in Uniaxial Dynamic Compression of Concrete, 160

Mathematical models

- 1-D Open-Channel Flow Simulation Using TVD-McCormack Scheme, 550
- Analytical Aerodynamic Investigation of Cable-Stayed Helgeland Bridge, 765
- Bolted Connections in Wood under Bending/Tension Loading, 813
- Coarse-Grain Parallel Computing Using ISIS Tool Kit, 73
- Conceptual Bed-Load Transport Model and Verification for Sediment Mixtures, 535
- Diversion Oil Booms in Current, 1114
- Estimating Earthwork Volumes of Curved Roadways: Mathematical Model, 1021
- Evaluation of Advanced Construction Technology with AHP Method, 124

SUBJECT INDEX

- Financial Performance Analysis for Construction Industry, 111
- Mathematical Model for Piping, 415
- Mathematical Zero-Inertia Modeling of Surface Irrigation: Advance in Furrows, 571
- Migration of Chloroform in Aquifers, 315
- Modeling and Simulating Learning Development in Construction, 131
- Modeling Load-Slip Behavior of Nailed Joints, 700
- Modeling Low-Flow Mixing through Pools and Riffles, 553
- Modeling of Soil Venting Processes to Remediate Unsaturated Soils, 314
- Modeling Vertical Structure of Open-Channel Flows, 534
- Operational Strategies for Predenitrification Process, 309
- Optimal Long-Term Scheduling of Bridge Deck Replacement and Rehabilitation, 987
- Optimal Scheduling of Consecutive Landfill Operations with Recycling, 332
- pH Control in Anaerobic Treatment of Industrial Wastewater, 340
- Rationalizing Water Requirements with Aid of Fuzzy Allocation Model, 1055
- Reservoir Systems Analysis: Closing Gap Between Theory and Practice, 1052
- Shape Optimization of Arch Dams for Static and Dynamic Loads, 925
- Sludge Loading Rates for Forest Land, 317
- Stability Theory of Cohesive Crack Model, 189
- Structural Fire Protection, 1271
- Transients in Canal Network, 620
- Use of Density Current to Modify Thermal Structure of TVA Reservoirs, 506
- Velocity Gradient in Filter Backwashing, 353
- Water-Quality Modeling for Decision Making, 1054
- Mathematical programming**
 - Use of Mathematical Programming Methods for Complex Systems, 1053
- Mathematics**
 - Conversion Between Quadratic and Power Law for Non-Darcy Flow, 513
 - Drawdowns for Nonleaky Aquifer Flow with Storage in Finite-Width Sink, 617
 - Elastic Solutions for Arbitrarily Shaped Foundations, 414
 - EQSWP: Extended Unsteady-Flow Double-Sweep Equation Solver, 509
 - Horton Infiltration Equation Revisited, 630
 - Interpretation of Kostikov Infiltration Parameters for Borders, 582
 - Protected-Paste Volume of Air-Entrained Cement Paste. Part 1, 684
- Matrices, mathematics**
 - EQSWP: Extended Unsteady-Flow Double-Sweep Equation Solver, 509
- Mats**
 - Dams Going Safely over the Top, 1122
 - A Monumental Task, 1171

Memoirs of deceased members

- Measurement**
 - Measurement and Prediction of Surface Shear Stress in Annular Flume, 543
 - Measurement of Deformations in Buried Pipeline, 957
 - Measuring Ozone by Indigo Method: Interference of Suspended Material, 67
 - Model Uncertainty Representation in Geotechnical Reliability Analyses, 384
 - Synchrotron Radiation Measurements of Degree of Saturation in Porous Matrix, 257
- Measuring instruments**
 - Design Live Loads for Coherent Crowd Harmonic Movements, 821
 - New Total Sediment-Load Sampler, 569
 - Photogrammetric Solution for Vehicle-Damage Investigation, 1022
- Mechanical engineering**
 - Probabilistic Mechanics and Structural and Geotechnical Reliability, 1264
- Mechanical properties**
 - Effect of Strain Rate on Material Properties of Sheet Steels, 934
 - Hygrothermal Effects on Mechanical Properties of Lumber, 787
- Mechanics**
 - Computational Laboratory for Discrete Element Geomechanics, 67
 - Stability Analysis in Geomechanics by Linear Programming. I: Formulation, 458
- Mediation**
 - Resolving Construction Disputes by Mediation: Hong Kong Experience, 671
- Membranes**
 - Better Cover-Ups, 1160
 - Construction of Pressurized, Self-Supporting Membrane Structure on Moon, 34
 - Density Changes During Undrained Loading—Membrane Compliance, 470
 - Finite Element Modeling of Concrete Expansion and Confinement, 890
 - Membrane Compliance and Liquefaction of Sluiced Gravel Specimens, 409
 - Tensile Terminal, 1215
- Memoirs of deceased members**
 - Barham, Richard, 1276
 - Burke, Thomas D., 1277
 - Daubert, Henry, 1278
 - Dobbins, William E., 1279
 - Federman, Barry, 1280
 - Focht, John A., 1281
 - Fraivillig, Leonard, 1282
 - Hedger, Harold E., 1283
 - Jones, Arthur Logan, Jr., 1284
 - Keulegan, Garbis Hvannes, 1285
 - Lee, James Chin, 1286
 - Marrara, Joseph P., Sr., 1287
 - O'Shea, Robert, 1288
 - Pillsbury, Arthur Francis, 1289
 - Rawhouser, Clarence, 1290

Wallace, Wayne Paul, 1291

Mergers

Thoughts on Management of Acquisitions, 651

Mesh generation

Computer Graphics in Detailing Strut-Tie Models, 72

Mesh Generation for Estuarine Flow Modeling, 1115
Transition Plate-Bending Elements for Compatible Mesh Gradation, 181

Metals

Bioleaching of Metals from Sewage Sludge by Sulfur-Oxidizing Bacteria, 348

Creep and Creep Rupture of Metallic Composites, 251

Necking of Creep-Cavitating Bars, 199

Simple Cord Composites, 270

Structural Evaluation of Box Culverts, 945

Thermal Stresses in Bi-Coated Structures, 269

Meteorological data

Analysis of Evaporative Flux Data for Various Climates, 613

Meteorology

BEST: New Satellite Mission Dedicated to Tropical System Energy Budget, 15

Integrated Assessment of Acid-Deposition Effects on Lake Acidification, 313

Meteors

Projectile Shape and Material Effects in Hypervelocity Impact Response of Dual-Wall Structures, 43

Methodology

Determination of Critical *J*-Integral for Wood, 854

Systems-Engineering Methodology for Engineering Planning Applications, 734

Metric systems

Diffuse Double-Layer Equations in SI Units, 475

Mexico

Three-Dimensional Seismic Analysis of La Villita Dam, 471

Yielding of Mexico City Clay and Other Natural Clays, 417

Michigan

Motown Tunneling, 1154

Micro piles

Minipile Milestone in Memphis, 1196

Microbes

Effect of Nitrogen on Yield Using Bioenergetics Theory, 356

Microbial activity

Bioleaching of Metals from Sewage Sludge by Sulfur-Oxidizing Bacteria, 348

Microbiologically Induced Corrosion, 1161

Microcomputers

Comprehensive Regional Socioeconomic Simulation System, 1030

Microcomputer-Based Project Management for Small Engineering Firms, 648

User-Friendly PC-Based Design Package for Gravity-Type Seawalls, 1097

Microtunneling

Manholes and Microtunneling, 1228

Migration

Moisture Migration Through Concrete Floor Slabs, 707

Mining

Engineering, Construction, and Operations in Space III, 1244

Minority groups

Providing Lead Role in Work-Force Diversity, 728

Mirrors

Support Structures for High-Resolution Optical Systems, 17

Mississippi River

The OCEA Awards of Merit, 1178

Mixing

Destruction of Stratification By Bubble Plume, 501

Efficiency of Jet Mixing of Temperature-Stratified Water, 328

Longitudinal Dispersion Coefficients in Estuary, 508

Modeling Low-Flow Mixing through Pools and Riffles, 553

U.S. Sludge Digesters: From Pancakes to Eggs, 1205

Velocity Distribution in Uniform Sediment-Laden Flow, 482

Mixtures

Predictions of Thermal Characteristics for Mixed Porous Media, 685

Mobility

Conceptual Bed-Load Transport Model and Verification for Sediment Mixtures, 535

Modal analysis

Damage Diagnosis of Steel Frames Using Vibrational Signature Analysis, 271

Elastic Wood Properties from Dynamic Tests and Computer Modeling, 905

Modal Identification Algorithm with Unmeasured Input, 45

Modal Synthesis Method for General Dynamic Systems, 241

Model accuracy

Correction Criteria of Finite Element Modeling in Structural Dynamics, 194

Model Correction via Compatible Element Method, 39

Model analysis

Correction Criteria of Finite Element Modeling in Structural Dynamics, 194

Model studies

Model Correction via Compatible Element Method, 39

Model tests

Ice Loads on Vertical Bridge Pier at Two Different Model Scales, 55

Model verification

Anisotropic Plasticity Model for Undrained Cyclic Behavior of Clays. II: Verification, 380

Hierarchical Single-Surface Model for Static and Cyclic Behavior of Interfaces, 212

Micromechanics Modeling for Stress-Strain Behavior of Granular Soils. II: Evaluation, 473

Modeling Vertical Structure of Open-Channel Flows, 534

Routing of Heterogeneous Sediments over Movable Bed: Model Verification, 484

Modeling

Adaptive Parameter Estimation for Multisite Hydrologic Forecasting, 539

Aggradation-Degradation Process in Alluvial Channels, 567

Associative Plasticity for Dilatant Soils, 200

Beach-Nourishment Performance Predictions, 1113

Comprehensive Regional Socioeconomic Simulation System, 1030

Compressive Softening Model for Concrete, 245

Computer Graphics in Detailing Strut-Tie Models, 72

Construction Project Planning Process Model for Small-Medium Builders, 128

Correction Criteria of Finite Element Modeling in Structural Dynamics, 194

Cost Models for Preliminary Economic Evaluation of Sprinkler Irrigation Systems, 625

Damage of Concrete in Fatigue, 287

Design and Operation of On-Farm Irrigation Ponds, 618

Effect of Static Offset on TLP Modeling, 158

Effects of Bottom Friction on Wave Breaking Using RCPWAVE Model, 1103

Effects of Drainage and Water-Management Practices on Hydrology, 628

Engineering-Econometric Model of Energy Demand, 146

Evaluation and Control of Collapsible Soils, 447

Evaluation of Supercritical/Subcritical Flows in High-Gradient Channel, 533

Expert System for Construction Safety. I: Fault-Tree Models, 722

Expert System for Construction Safety. II: Knowledge Base, 723

Finite Element Model for Seismic RC Coupled Walls Having Slender Coupling Beams, 921

Finite Element Modeling of Single-Solute Activated-Carbon Adsorption, 320

Furrow Flow Velocity Effect on Hydraulic Roughness, 643

Further Contributions to Reliability-Based Pile-Settlement Analysis, 403

Geometric Modeling of Inflatable Structures for Lunar Base, 37

Hygrothermal Effects on Load-Duration Behavior of Structural Lumber, 815

Improved First-Order Uncertainty Method for Water-Quality Modeling, 354

Intelligent Objects for Synthesis of Structural Systems, 75

Interactive Base-Isolation Foundation System: I. Finite Element Formulation, 277

Issues in Hydropower Modeling Using GEMSLP Algorithm, 1039

Load-Duration Effects in Structural Lumber: Strain Energy Approach, 888

Managing Lower Colorado River, 1056

Measured to the Max, 1216

Mechanism of Biological Treatment in Plug-Flow or Batch Systems, 344

Mesh Generation for Estuarine Flow Modeling, 1115

Model for Air Travel Demand, 991

Model for Estimating Tidal Flushing of Small Embayments, 1117

Model for Prescribing Ground-Water Use Permits, 1069

Modeling and Pilot-Scale Experimental Verification for Predenitrification Process, 308

Modeling Desiccating Behavior of Mine Tailings, 393

Modeling Effects of Chemical Explosives for Excavation on Moon, 18

Modeling Horizontally Nail-Laminated Beams, 836

Modeling Irrigation Schedules for Lowland Rice with Stochastic Rainfall, 573

Modeling Monsoon-Affected Rainfall of Pakistan by Point Processes, 1076

Modeling of Toxic Wastewater Treatment by Expanded-Bed Anaerobic GAC Reactors, 337

Modeling Shallow Overland Flow in Surface Irrigation, 586

Modeling Strength of Sandy Gravel, 413

Multiple Subregion Allocation Models, 1026

NIAM Conceptual Data-Base Design in Construction Management, 62

Nonlinear Modeling of Truss-Plate Joints, 897

Numerical and Physical Modeling of Air Diffuser Plume, 321

Numerical Study of Soil Anisotropy, 167

Object-Oriented Approaches for Integrated Engineering Design Systems, 74

Object-Oriented Model of Engineering Design Standards, 78

One-Dimensional Model for Analysis of CRC Pavement Growth, 1004

Orthometric Heights from Global Positioning System, 962

Out-of-Plane Seismic Response of Reinforced Masonry Walls, 896

Positive Drift of a Backward-Bent Duct Barge, 1084

Primitive-Composite Approach for Structural Data Modeling, 61

Removal of 1,2 Dibromo-3-Chloropropane by Countercurrent Cascade Air Stripping, 319

Reservoir Management and Thermal Power Generation, 1061

Routing of Heterogeneous Sediments over Movable Bed: Model Development, 483

Saturation Flow and Capacity of Shared Permissive Left-Turn Lane, 1008

Simple Double-Hardening Model for Geomaterials, 411

Simple Rigid Plastic Model for Seismic Tilting of Rigid Walls, 782

Simulating THM Formation Potential in Sacramento Delta: Part I, 1067

Soil Suction-Potential Model, 392

Solid Modeling of RC Beams: 1. Data Structures and Algorithms, 81

Solid Modeling of RC Beams: 2. Computational Environment, 82

- Stepwise Disaggregation Scheme for Synthetic Hydrology, 511
- Systems Analysis in Ground-Water Planning and Management, 1049
- Thermodynamic Model of Nitrification Kinetics, 341
- Tuned Liquid Damper (TLD) for Suppressing Horizontal Motion of Structures, 275
- Unified Pavement Distress Index for Managing Flexible Pavements, 1012
- Water Resource Systems Models: Their Role in Planning, 1048
- Water Resources Planning and Management: Saving a Threatened Resource—In Search of Solutions, 1275

Models

- Analytical Moment-Curvature Relations for Tied Concrete Columns, 785
- Appropriate Use of Deep-Bed Filtration Models, 365
- Cone Models for Homogeneous Soil. I, 400
- Cone Models for Soil Layer on Rigid Rock. II, 401
- Consequential Equipment Costs Associated with Lack of Availability and Downtime, 13
- Dynamic Elastic-Plastic Buckling Behavior Illustrated by Simple Model, 274
- Dynamic Response of Multigirder Bridges, 881
- Experimental Study of Secondary Systems in Base-Isolated Structure, 880
- Fully Coupled Unsteady Mobile Boundary Flow Model (FCM), 497
- Hydraulic Geometry of Threshold Channels, 503
- Identification of Control System for Canal with Night Storage, 597
- Integrated Physical Model for Cylindrical Shells, 878
- Model for Biological Reactors Having Suspended and Attached Growths, 366
- Model for Optimal Design of Reinforced Concrete Beam, 940
- Momentum Model of Flow Past Weir, 644
- Nonlinear Cyclic Behavior of Reinforcing Bars Including Buckling, 943
- Nonlinear Finite-Element Model for Light-Frame Stud Walls, 933
- Nonlinear Soil-Pile Interaction Model for Dynamic Lateral Motion, 373
- Optimization of Real-Time Hydrothermal System Operation, 1074
- Predicting Construction Contractor Failure prior to Contract Award, 138
- Risk Consistent Estimate of Heat-Straightening Applications. I: Plates, 951
- Risk Consistent Estimate of Heat-Straightening Applications. II: Beams, 952
- Steady-State and Multiple Cracking of Short Random Fiber Composites, 291
- Strength and Ductility of Confined Concrete, 847
- Thermal Stratification Modeling of Lakes with Sediment Heat Flux, 493
- Tidal Model Using Method of Characteristics, 1095
- Trash Rack Blockage in Supercritical Flow, 570
- Water-Balance Model of Two Conservancies in Guyana, 606

Modular structures

- CONSCHE: Expert System for Scheduling of Modular Construction Projects, 119

Modulus of elasticity

- Laboratory versus Nondestructive Testing for Pavement Design, 980
- Rigid-Pavement Evaluation Using NDT—Case Study, 1002
- Variations in Measured Resilient Modulus of Asphalt Mixes, 697

Moisture content

- Creep Behavior Model for Structural Lumber, 883
- Drying and Cracking Effects in Box-Girder Bridge Segment, 773
- Hygrothermal Effects on Load-Duration Behavior of Structural Lumber, 815
- Hygrothermal Effects on Mechanical Properties of Lumber, 787
- Moisture Content and Reliability-Based Design for Wood Members, 955
- Moisture Effects on Flexural Performance of Wood Fiber-Cement Composites, 692
- Synchrotron Radiation Measurements of Degree of Saturation in Porous Matrix, 257
- Walking of Flatwork on Expansive Soils, 708

Moisture density relations

- Engineering Behavior of Water Treatment Sludge, 358

Moment distribution

- Prevention of Stress Relaxation in Viscoelastic Structures, 860
- Slender Reinforced Concrete Bridge Towers under Cyclic Lateral Load, 6
- Yield Safety, Cracking Control, and Moment Redistribution, 781

Moments

- Deflections of Beams with Varying Rectangular Cross Section, 282
- Fixed-End Moments and Thrusts of Planar Curved Beams, 774
- Point-Estimate Method for Calculating Statistical Moments, 242
- Residual Deformation Analysis for Inelastic Bridge Rating, 842
- Simple Cord Composites, 270

Momentum transfer

- Momentum Model of Flow Past Weir, 644

Monitoring

- The Evolution of an Environmental Monitor, 1170
- Optimal Locations of Monitoring Stations in Water Distribution System, 306
- Project Management Oversight—Good Tool for Program Managers, 659
- Review of Ground-Water Quality Monitoring Network Design, 477
- Road and Airport Pavement Response Monitoring Systems, 1267
- Settling Down Easy, 1235

Monsoons

- Modeling Monsoon-Affected Rainfall of Pakistan by Point Processes, 1076

Monte Carlo method

- Evaluation of Probabilities Using Orientated Simulation, 852

SUBJECT INDEX

Monte Carlo Technique with Correlated Random Variables, 105
Optimal Importance-Sampling Density Estimator, 221
Monuments
Engineering a Monument, Evoking a Nightmare, 1130
A Monumental Task, 1171
Moon
Behavior of Compacted Lunar Simulants Using New Vacuum Triaxial Device, 44
Cable Structures and Lunar Environment, 36
Concept Evaluation Methodology for Extraterrestrial Habitats, 35
Construction of Pressurized, Self-Supporting Membrane Structure on Moon, 34
Design and Construction Considerations for Lunar Outpost, 33
Engineering, Construction, and Operations in Space III, 1244
Engineering Issues for Early Lunar-Based Telescopes, 38
Framework for Evaluation of Lunar Base Structural Concepts, 28
Geometric Modeling of Inflatable Structures for Lunar Base, 37
Geotechnical Investigation Strategies for Lunar Base, 29
Indigenous Resource Utilization in Design of Advanced Lunar Facility, 31
Mechanical Equipment Requirements for Inflatable Lunar Structures, 32
Modeling Effects of Chemical Explosives for Excavation on Moon, 18
Overview of Existing Lunar Base Structural Concepts, 26
Regolith Mechanics, Dynamics, and Foundations, 30
Structural Design of Lunar Radio Telescope Using Interactive CAD, 16
Technical Issues for Lunar Base Structures, 27
Use of Explosives on the Moon, 19
Moorings
Water-Level Oscillations in Esperance Harbour, 1101
Mortars
Fracture Analysis of Mortar-Aggregate Interfaces in Concrete, 276
Strength and Shrinkage of Natural Pozzolan Mortar in Hot Weather, 683
Motion
Coupled Vertical and Horizontal Galloping, 159
Motivation
Financial Incentive Programs for Average-Size Construction Firm, 129
Managing and Motivating People on a Joint Venture Project, 668
Nonmonetary Incentives: It Can Be Done, 647
Motor vehicles
Photogrammetric Solution for Vehicle-Damage Investigation, 1022
Mountains
Norway's Olympic Cavern, 1230

Navier-Stokes equations

Movable bed models
Note on Lag in Bedload Discharge, 520
Mud
Estimation of Chloride Diffusion Coefficient and Tortuosity Factor for Mudstone, 420
Multiple objective analysis
Conjunctive-Use Planning in Mad River Basin, California, 1043
Design/Control Optimization of Cross-Ply Laminates under Buckling and Vibration, 24
Managing Lower Colorado River, 1056
Model for Prescribing Ground-Water Use Permits, 1069
Multiobjective Analysis of Multireservoir System, 1059
Use of Mathematical Programming Methods for Complex Systems, 1053
Multiple purpose projects
Conjunctive-Use Planning in Mad River Basin, California, 1043
Multiobjective Analysis of Multireservoir System, 1059
Planning and Management of Water-Resource Systems in Developing Countries, 1072
Research/Application of System Engineering to Water Resources Systems, 1057
Multiple use
Multilayered, Priority-Based Simulation of Conjunctive Facilities, 1038
Multistory buildings
Dynamics of Buildings with V-Shaped Plan, 218
Experimental Study of Secondary Systems in Base-Isolated Structure, 880
In-Plane Floor Deformations in RC Structures, 930
Simplified Building Analysis with Sequential Dead Loads—CFM, 809
Municipal wastes
Design of Municipal Wastewater Treatment Plants, 1241
Durability of MSW Fly-Ash Concrete, 699
Loss of PCBs from Municipal-Sludge-Treated Farmland, 10
MSW Incinerator Ash as Aggregate in Concrete and Masonry, 698
Partitioning of Elements by Refuse Processing, 350
Nails
Modeling Horizontally Nail-Laminated Beams, 836
Modeling Load-Slip Behavior of Nailed Joints, 700
Strength and Efficiency of Wood Box Columns, 796
Narrowband
Fatigue of Welded Cruciforms Subjected to Narrow-Band Loadings, 172
Natural frequency
Asymptotic Analysis of TLP Tendons and Risers, 157
Quantitative NDE Technique for Assessing Damages in Beam Structures, 240
Theoretical Study of Crack-Induced Eigenfrequency Changes on Beam Structures, 177
Navier-Stokes equations
About Moving Contact Lines, 198

Nonlinear Water Waves Generated by Submarine and Aerial Landslides, 1096

Navigation

Coastal Engineering Practice '92, 1237

Design of Bridge Pier Pile Foundations for Ship Impact, 877

Laptop Automated Navigation Aid Positioning System with Differential GPS, 967

LGG System for Emergency Response Applications, 964

Nearshore circulation

Laboratory Study of Oil Slick Subjected to Nearshore Circulation, 362

Negotiations

Planning Your Negotiation, 660

Network design

Review of Ground-Water Quality Monitoring Network Design, 477

Networks

Assessing the Potential of E-Mail for Engineers: Case Study, 667

Distributed Approach to Optimized Control of Street Traffic Signals, 974

Neuroform—Neural Network System for Vertical Formwork Selection, 70

Transaction-Management Issues in Collaborative Engineering, 65

Transients in Canal Network, 620

New York City

From Sludge to Brokered Biosolids, 1185

GIS: New York's Pipe Dream, 1136

Principles of Holistic Medicine Applied to Infrastructure Maintenance: A Test Case, 1126

Tunnel Takes Cathodic Protection, 1220

Newton-Raphson method

Design of RC Sections with Generic Shape under Biaxial Bending, 822

Solving Circular Curve Using Newton-Raphson's Method, 959

Nitrates

Nitrate Risk Management under Uncertainty, 1045

Nitrification

QSAR Parameters for Toxicity of Organic Chemicals to *Nitrobacter*, 307

Thermodynamic Model of Nitrification Kinetics, 341

Nitrites

Thermodynamic Model of Nitrification Kinetics, 341

Nitrogen

Controlling Nitrogen in Coastal Waters, 1142

Effect of Nitrogen on Yield Using Bioenergetics Theory, 356

Sludge Loading Rates for Forest Land, 317

Nitrogen removal

Modeling and Pilot-Scale Experimental Verification for Predenitrification Process, 308

Operational Strategies for Predenitrification Process, 309

Noise

Noise Barrier Simulated by Rigid Screen with Back Wall, 156

Noise control

Noise Barrier Simulated by Rigid Screen with Back Wall, 156

Nomographs

Flow in Trapezoidal Channels, 641

Nondestructive tests

AASHTO Direct Structural Capacity Method Error Analysis, 969

Airfield Pavement Creep Failure Investigation, 719
Dynamic Stiffness Analysis of Concrete Pavement Slabs, 1003

Elastic Wood Properties from Dynamic Tests and Computer Modeling, 905

Laboratory versus Nondestructive Testing for Pavement Design, 980

Learning to Love NDT, 1121

Nondestructive Testing of Concrete Elements and Structures, 1261

Quantitative NDE Technique for Assessing Damages in Beam Structures, 240

Rigid-Pavement Evaluation Using NDT—Case Study, 1002

Seasonal Soil Strength by Spectral Analysis of Surface Waves, 51

Nonlinear analysis

Analysis of Stability of L'Ambiance Plaza Lift-Slab Towers, 721

Analysis of Thick Circular Plates Undergoing Large Deflections, 25

Arc-Length Method for Passing Limit Points in Structural Calculation, 766

Axisymmetric Buckling of Pressure-Loaded Spherical Caps, 811

Elastoplastic Nonlinear Analysis of Flexibly Jointed Space Frames, 763

Event-to-Event Strategy for Nonlinear Analysis of Truss Structures. I, 806

Finite Element Modeling of Concrete Expansion and Confinement, 890

Frame Buckling Analysis with Full Consideration of Joint Compatibilities, 205

Geometrical Imperfections on Inelastic Frame Behavior, 837

Hypar Shell on Pasternak Foundation, 230

Incorporating Load Sharing in Shear Wall Design of Light-Frame Structures, 948

Nonlinear Finite-Element Model for Light-Frame Stud Walls, 933

Nonlinear Free Vibration of Laminated Composite Plates, 164

Nonlinear Stability of Differential Surge Chambers, 560

Optimal Design of Structures with Kinematic Nonlinear Behavior, 196

Prebuckling Deflections and Lateral Buckling. I: Theory, 922

Prebuckling Deflections and Lateral Buckling. II: Applications, 923

Predicting Behavior of Cyclically Loaded RC Structures, 790

SUBJECT INDEX

- Propagation of Long Waves Onto Shelf, 1080
- Reliability of Geometrically Nonlinear PR Frames, 285
- Seismic Performance of Fixed-Base and Base-Isolated Steel Frames, 208
- Slender Reinforced Concrete Bridge Towers under Cyclic Lateral Load, 6
- Static Response of Prestressed Girders with Openings, 783
- Stiffness Expressions for Element with Central and End Springs, 810
- Stiffness Matrix for Nonlinear Analysis of Thin-Walled Frames, 265
- Tuned Liquid Damper (TLD) for Suppressing Horizontal Motion of Structures, 275
- Nonlinear differential equations**
 - Nonlinear Free Vibration of Laminated Composite Plates, 164
 - Nonlinear Modeling of Truss-Plate Joints, 897
 - Postbuckling of Polar Orthotropic Circular Plates—Retrospective, 280
- Nonlinear programming**
 - Model for Optimal Design of Reinforced Concrete Beam, 940
 - Multiple Subregion Allocation Models, 1026
 - Quasi-Three-Dimensional Optimization Model of Jakarta Basin, 1037
 - Simultaneous Design and Control of Stiffened Laminated Composite Structures, 23
- Nonlinear response**
 - Nonlinear Impulsive Motions of Low-Tension Cables, 202
 - Parametric and External Excitation of Marine Risers, 209
- Nonlinear systems**
 - Analysis of Circular RC Columns for Short- and Long-Term Deformations, 793
 - Branch Switching in Bifurcation of Structures, 247
 - Control of Hysteretic System Using Velocity and Acceleration Feedbacks, 290
 - Design of RC Sections with Generic Shape under Biaxial Bending, 822
 - Dynamic Behavior of Nonlinear Cable System. I, 206
 - Dynamic Behavior of Nonlinear Cable System. II, 207
 - Equivalent Linearization for Seismic Responses. I: Formulation and Error Analysis, 289
 - Nonlinear Soil-Pile Interaction Model for Dynamic Lateral Motion, 373
- Nonpoint pollution**
 - Controlling Nitrogen in Coastal Waters, 1142
 - Movement of Nonpoint-Source Contaminants Through Heterogeneous Soils, 577
 - Partitioning Phosphorus Loads: Implications for Lake Restoration, 1070
- Nonproportional loading**
 - Comparative Evaluation of Plasticity Theories against Tension-Torsion Test at Finite Strain, 281
- Nonuniform flow**
 - Variation of Velocity Distribution along Nonuniform Open-Channel Flow, 525

Numerical calculations

- Velocity Distribution Inside and Above Branched Flexible Roughness, 636
- North Sea**
 - Uncertainty and Reliability Analysis of Jacket Platform, 907
- Norway**
 - Norway's Olympic Cavern, 1230
- Notches**
 - Design of Notched Wood Beams, 891
- Nuclear power plants**
 - Use of Density Current to Modify Thermal Structure of TVA Reservoirs, 506
- Nuclear wastes disposal**
 - Dynamic Compaction of Nuclear Waste, 1144
- Numerical analysis**
 - About Moving Contact Lines, 198
 - Analytical Solutions for Thick, Doubly Curved, Laminated Shells, 232
 - Antiplane Problems of Monoclinic Material, 259
 - Axisymmetric General Shells and Jointed Shells of Revolution, 937
 - Branch Switching in Bifurcation of Structures, 247
 - Cable-Stayed Bridge Vibration Due to Road Surface Roughness, 834
 - Combined Symbolic-Numeric Explosion Damage Assessment for Structures, 83
 - Complete Biaxial Load-Deformation Behavior of RC Columns, 901
 - Computation of Turbulent Shear Flow Over Surface-Mounted Obstacle, 293
 - Development of Bed Features, 5
 - Force Deformation Equations for Initially Curved Laterally Loaded Beam Columns, 229
 - Frequency Domain Analysis of Undamped Systems, 197
 - Improved Rectangular Element for Shear Deformable Plates, 173
 - Kinematics of Nonlinear Random Waves near Free Surface, 279
 - Measurement and Prediction of Surface Shear Stress in Annular Flume, 543
 - Postbuckling of Polar Orthotropic Circular Plates—Retrospective, 280
 - Prediction Method for Local Scour by Warmed Cooling-Water Jets, 537
 - Response of Cross-Anisotropic Seabed to Ocean Waves, 437
 - Shear-Band Analysis in Idealized Granular Material, 178
 - Soil Plug Response in Open-Ended Pipe Piles, 404
 - Solving Circular Curve Using Newton-Raphson's Method, 959
 - Stage-Discharge Relationship in Tidal Rivers, 1088
 - Tidal Model Using Method of Characteristics, 1095
 - Timoshenko Beam Element Resting on Two-Parameter Elastic Foundation, 171
- Numerical calculations**
 - High Frequency Basin Irrigation Design for Upland Crops in Rice Lands, 611
 - Numerical Solution of Muskingum Equation, 515

Numerical models

- Armor Stability on Submerged Breakwaters, 1092
- Bed-Load Transport on Transverse Slope. I, 499
- Density Currents and Shear-Induced Flocculation in Sedimentation Tanks, 517
- Estuarine and Coastal Modeling, 1247
- Flow-Deformation Response of Dual-Porosity Media, 374
- The Hopscotch Algorithm for Three-Dimensional Simulation, 492
- Hydrodynamic Furrow Irrigation Model with Specified Space Steps, 603
- Influences of Density on Circular Clarifiers with Baffles, 357
- Irregular Wave Setup and Run-up on Beaches, 1102
- Mechanics of Saltating Grains. II, 500
- Modeling of Rectangular Settling Tanks, 552
- Nonlinear Water Waves Generated by Submarine and Aerial Landslides, 1096
- Numerical and Physical Modeling of Air Diffuser Plume, 321
- Performance of Test Embankment Constructed to Failure on Soft Marine Clay, 369
- Postbuckling Response Simulations of Laminated Anisotropic Panels, 40
- Review of Equations of Conservation in Curvilinear Coordinates, 292
- Routing of Heterogeneous Sediments over Movable Bed: Model Development, 483
- Side Weir in Triangular Channel, 640
- Simulating THM Formation Potential in the Sacramento Delta: Part II, 1068
- Two-Dimensional Leachate Estimation through Landfills, 487
- Water-Level Oscillations in Esperance Harbour, 1101
- Object-oriented languages**
- Comparing Object-Oriented and Relational Data Models for Project Control, 79
- Expert Systems for Civil Engineers: Knowledge Representation, 1249
- Intelligent Objects for Synthesis of Structural Systems, 75
- Object-Oriented Programming for Scientific Codes. I: Thoughts and Concepts, 87
- Object-Oriented Programming for Scientific Codes. II: Examples in C++, 88
- Ocean bottom**
- Effects of Bottom Friction on Wave Breaking Using RCPWAVE Model, 1103
- Ocean disposal**
- From Sludge to Brokered Biosolids, 1185
- Mixing, Dispersion, and Resuspension in Vicinity of Ocean Wastewater Plume, 478
- Transport of Low-Level Radioactive Soil at Deep-Ocean Disposal Site, 312
- Ocean engineering**
- Pile Capacity for Axial Cyclic Loadings, 370
- Three-Dimensional Characteristics Model of Wind-Generated Turbulent Flow, 244
- Tidal Model Using Method of Characteristics, 1095

Ocean environments

- Microorganism Survival in Ice-Covered Marine Environment, 53

Ocean mining

- Offshore Challenge, 1208

Ocean waves

- Flow Field Induced by Sea Waves Over Brick-Pattern Ripples, 541
- Response of Cross-Anisotropic Seabed to Ocean Waves, 437

Oceanography

- Shoreline Profile of Stokes-Mode Edge Waves, 1085

Offshore engineering

- Coastal Engineering Practice '92, 1237
- Measured Internal Kinematics for Shoaling Waves with Theoretical Comparisons, 1098

Offshore pipeline

- Buckle Propagation in Submarine Pipelines, 288
- Parametric and External Excitation of Marine Risers, 209

Offshore platforms

- Offshore Challenge, 1208
- Pile Capacity for Axial Cyclic Loadings, 370
- Uncertainty and Reliability Analysis of Jacket Platform, 907

Offshore structures

- Asymptotic Analysis of TLP Tendons and Risers, 157
- Behavior of Partially Grout-Filled Damaged Tubular Members, 928
- Effect of Static Offset on TLP Modeling, 158
- Fatigue Life of Offshore Steel Structures Under Stochastic Loading, 874
- Kinematics of 2-D Transient Water Waves Using Laser Doppler Anemometry, 1087
- Modal and Wave Load Identification by ARMA Calibration, 228
- Parametric and External Excitation of Marine Risers, 209
- Reserve Capacity Design Method (RCDM) for Deep-water Piled Foundations, 1079
- Scour Around a Vertical Pile in Waves, 1078
- Soil Plug Response in Open-Ended Pipe Piles, 404
- Structural Efficiency of Internally Ring-Stiffened Steel Tubular Joints, 926
- Systems Reliability Approach to Fatigue of Structures, 794
- Three-Dimensional Scattering of Solitary Waves by Vertical Cylinder, 1112
- Time-Domain Second-Order Wave Diffraction in Three Dimensions, 1109
- Wire Recovery Length in Suspension Bridge Cable, 942
- Oil spills**
- Diversion Oil Booms in Current, 1114
- Laboratory Study of Oil Slick Subjected to Nearshore Circulation, 362
- Oklahoma**
- Life in the Fast Track, 1150

Open channel flow

- 1-D Open-Channel Flow Simulation Using TVD-McCormack Scheme, 550
- Characteristic Dissipative Galerkin Scheme for Open-Channel Flow, 489
- Critical Depth Relations for Flow Measurement Design, 616
- Field-Measured Hydraulic Resistance Characteristics in Vegetation-Infested Canals, 590
- Modeling Vertical Structure of Open-Channel Flows, 534
- Modern Approach to Design of Grassed Channels, 623
- Open-Channel Flow Algorithm in Newton-Raphson Form, 594
- Optimal Irrigation Delivery System Design under Uncertainty, 602
- Stochastic Theory for Irregular Stream Modeling. Part I: Flow Resistance, 531
- Turbulence Characteristics of Sediment-Laden Flows in Open Channels, 524
- Variation of Velocity Distribution along Nonuniform Open-Channel Flow, 525
- Velocity Profiles in Steep Open-Channel Flows, 480

Open channels

- Computation Method for Regulating Unsteady Flow in Open Channels, 619
- Dimensionally Homogeneous Manning's Formula, 548
- Effects of Porous Bed on Turbulent Stream Flow above Bed, 540
- EQSWP: Extended Unsteady-Flow Double-Sweep Equation Solver, 509
- Flow Capacity through Wide and Submerged Vegetal Channels, 622
- Flow in Trapezoidal Channels, 641
- Modeling Low-Flow Mixing through Pools and Rifles, 553
- Probabilistic Design of Open Drainage Channels, 633
- Small Parshall Flume Rating Correction, 514
- Study of Open-Channel Dynamics as Controlled Process, 479
- Variation of Velocity Distribution along Nonuniform Open-Channel Flow, 525
- Vertical Distribution of Suspended Sediment in Uniform Open-Channel Flow, 522

Openings

- Static Response of Prestressed Girders with Openings, 783

Operating costs

- Consequential Equipment Costs Associated with Lack of Availability and Downtime, 13

Operation

- Computation Method for Regulating Unsteady Flow in Open Channels, 619
- Expert System for Anaerobic-Digestion-Process Operation, 364
- Operational Strategies for Predenitrification Process, 309
- Participative Process in Tube Well Irrigation Development, 634

Optimal control methods

- Aseismic Hybrid Control of Nonlinear and Hysteretic Structures I, 237
- Aseismic Hybrid Control of Nonlinear and Hysteretic Structures II, 238
- Bayesian Inference for Feedback Control. I: Theory, 600
- Bayesian Inference for Feedback Control. II: Surface Irrigation Example, 601
- Control of Hysteretic System Using Velocity and Acceleration Feedbacks, 290
- Design of Trapezoidal Expansive Transitions, 575
- Distributed Approach to Optimized Control of Street Traffic Signals, 974
- Frequency Domain Optimal Control of Wind-Excited Buildings, 303
- Operation of Large Multireservoir Systems Using Optimal-Control Theory, 1060
- Optimal Linear Segmented Structures with Variable Segment Boundaries, 298
- Stable Controllers for Instantaneous Optimal Control, 249

Optimal design

- Bending of Thin Plate with Three-Point Support, 838
- Design Optimization of Passively Cooled Room, 141
- Design/Control Optimization of Cross-Ply Laminates under Buckling and Vibration, 24
- Discrete Optimization of Structures Using Genetic Algorithms, 827
- Framework for Evaluation of Lunar Base Structural Concepts, 28
- High Frequency Basin Irrigation Design for Upland Crops in Rice Lands, 611
- Model for Optimal Design of Reinforced Concrete Beam, 940
- Optimal Design of Structures with Kinematic Nonlinear Behavior, 196
- Optimal Irrigation Delivery System Design under Uncertainty, 602
- Optimum Center-Pivot Irrigation System Design with Tillage Effects, 593
- Optimum Geometries for Pier-Type Airport Terminals, 979
- Plane Frame Optimum Design Environment Based on Genetic Algorithm, 931
- Seepage Optimization for Trapezoidal Channel, 607
- Simultaneous Design and Control of Stiffened Laminated Composite Structures, 23
- Systems Analysis in Ground-Water Planning and Management, 1049
- Use of Mathematical Programming Methods for Complex Systems, 1053

Optimal use

- Adequacy of Surface Water-Supply Systems: Case Study, 1073
- Planning and Management of Water-Resource Systems in Developing Countries, 1072
- Planning Operations of Bulk Loading Terminals by Simulation, 1099

Optimization

- Boundary-Element Direct Reanalysis for Continuum Structures, 253
- Comparison of Optimization Formulations for Waste-Load Allocations, 343

- Concurrent Optimization of Large Structures. I: Algorithms, 21
- Concurrent Optimization of Large Structures. II: Applications, 22
- Design of Control Algorithm for Operation of Irrigation Canals, 632
- Designing Articulated Vehicles for Low-Speed Maneuverability, 1014
- Discrete Optimization of Structures Using Genetic Algorithms, 827
- Feedback Control of Basin-Irrigation System, 605
- FRP-Reinforced Wood as Structural Material, 694
- Hydraulic Design of Perforated Breakwaters, 1077
- Irrigation Timing for Wheat Based on Climate, Crop, and Soil Data, 598
- Mechanics of Shape Optimization in Plate Buckling, 227
- Minimum Weight Design of Structural Topologies, 856
- Multiobjective Analysis of Multireservoir System, 1059
- Operational Strategies for Predenitrification Process, 309
- Optimal Design of Structures with Kinematic Non-linear Behavior, 196
- Optimal Linear Segmented Structures with Variable Segment Boundaries, 298
- Optimal Locations of Monitoring Stations in Water Distribution System, 306
- Optimal Long-Term Scheduling of Bridge Deck Replacement and Rehabilitation, 987
- Optimal Pump Scheduling in Water-Supply Networks, 1062
- Optimal Scheduling of Consecutive Landfill Operations with Recycling, 332
- Optimization and Simulation of Multiple Reservoir Systems, 1040
- Optimization of Real-Time Hydrothermal System Operation, 1074
- Optimization-Availability-Based Design of Water-Distribution Networks, 494
- Optimizing Launch-on-Time Probability, 41
- Reservoir Systems Analysis: Closing Gap Between Theory and Practice, 1052
- Review of Ground-Water Quality Monitoring Network Design, 477
- Shape Optimization of Arch Dams for Static and Dynamic Loads, 925
- Stability of Masonry Piers and Arches, 176
- Systems Analysis in Ground-Water Planning and Management, 1049
- TMDS for Vibration Control of Systems with Uncertain Properties, 944
- Using Component Mode Synthesis and Static Shapes for Tuning TMDs, 799
- Optimization models**
- Aggregation-Disaggregation Approach to Multireservoir Operation, 1063
- Optimization Model for Alternative Use of Different Quality Irrigation Waters, 587
- Quasi-Three-Dimensional Optimization Model of Jakarta Basin, 1037
- Systems Analysis in Water-Distribution Network Design: From Theory to Practice, 1050

- Oregon**
- Cleaning Up Chromium, 1146
- Organic carbon**
- TOC Removal by Coagulation and Softening, 333
- Organic chemicals**
- Theory and Experiments on Subsurface Contaminant Sorption Systems, 326
- Organic matter**
- C_d/C_c Concept Applied to Compression of Peat, 434
- Organization theory**
- Implementation of TQM in Building Design and Construction, 665
- Management's Fatal Flaw: TQM Obstacle, 650
- Organizational policy**
- Quality Management Organizations and Techniques, 96
- Orthotropic**
- Secondary Stresses in Closed Orthotropic Deck Ribs at Floor Beams, 788
- Stiffened Sheathings of Orthotropic Cylindrical Shells, 808
- Orthotropic plate**
- Analysis of Thick Circular Plates Undergoing Large Deflections, 25
- Postbuckling of Polar Orthotropic Circular Plates—Retrospective, 280
- Oscillations**
- Ice Loads on Vertical Bridge Pier at Two Different Model Scales, 55
- Nonlinear Stability of Differential Surge Chambers, 560
- Water-Level Oscillations in Esperance Harbour, 1101
- Oscillatory flow**
- Flow Field Induced by Sea Waves Over Brick-Pattern Ripples, 541
- Outfall sewers**
- Design Procedures for Effluent Discharge to Estuaries During Ebb Tide, 327
- Microorganism Survival in Ice-Covered Marine Environment, 53
- Mixing, Dispersion, and Resuspension in Vicinity of Ocean Wastewater Plume, 478
- Perils of Point Loma, 1221
- Outflows**
- Numerical Solution of Muskingum Equation, 515
- Overconsolidated soils**
- Effects of K_0 and Overconsolidation on Uplift Capacity, 446
- Overland flow**
- Beginning of Motion for Selected Unanchored Residue Materials, 614
- Calibrating SHE Soil-Erosion Model for Different Land Covers, 621
- Frictional Resistance of Overland Flow on Tropical Turfed Slope, 481
- Hydraulic Roughness Coefficients for Native Rangelands, 626
- Modeling Shallow Overland Flow in Surface Irrigation, 586

Overloads

Statistical Evaluation of Truck Overloads, 1010

Overpasses

Exact Minimum Sight Distance on Sag Curve with Centered Overpass, 1006

Overtopping

Dams Going Safely over the Top, 1122

Evaluating Spillway Adequacy, 1166

Owners

Howdy, Partner, 1147

Introduction to Ownership and Transition. I: Ownership Transfer Considerations, 669

Introduction to Ownership and Transition. II: Succession and Firm Valuation, 670

Overhead and Profit on Change Orders, 1193

Owner Involvement in Construction Projects in Saudi Arabia, 655

Predicting Construction Contractor Failure prior to Contract Award, 138

Risk Analysis Approach to Selection of Contractor Evaluation Method, 139

Underwriting Process for Construction Contract Bonds, 649

Oxygen content

Innovative Reregulation Weirs, 1163

Oxygen transfer

Gas Phase Control for Oxygen-Activated Sludge, 330

Ozone

Evaluation of Ozone Disinfection Systems: Characteristic Time T , 322

Evaluation of Ozone Disinfection Systems: Characteristic Concentration C , 336

Measuring Ozone by Indigo Method: Interference of Suspended Material, 367

Painting

Safeguarding Steel, 1151

Pakistan

Modeling Monsoon-Affected Rainfall of Pakistan by Point Processes, 1076

Panels

Postbuckling Response Simulations of Laminated Anisotropic Panels, 40

Steady-State Nonlinear Heat Transfer in Multilayered Composite Panels, 252

Transverse Shear Effect on Flutter of Composite Panels, 47

Parallel processing

Coarse-Grain Parallel Computing Using ISIS Tool Kit, 73

Computing in Civil Engineering and Geographic Information Systems Symposium, 1239

Concurrent Optimization of Large Structures. I: Algorithms, 21

Concurrent Optimization of Large Structures. II: Applications, 22

Object-Oriented Programming for Scientific Codes. I: Thoughts and Concepts, 87

Object-Oriented Programming for Scientific Codes. II: Examples in C++, 88

Parameters

Calibration Strategy for Urban Catchment Parameters, 562

Generalized State Parameter for Partly Saturated Soils, 398

Multiparameter Bidding System—Innovation in Contract Administration, 98

Mutual Residual Energy Method for Parameter Estimation in Structures, 769

Recursive Parameter Estimation for ARMA Simulations, 304

Response of Systems with Uncertain Parameters to Stochastic Excitation, 213

Simulating Solute Transport Using Laboratory-Based Sorption Parameters, 347

Systems Analysis in Ground-Water Planning and Management, 1049

Particle distribution

Routing Debris Flows with Particle Segregation, 558

Particle interactions

Collisional Restitution Dependence on Viscosity, 211

Diffuse Double-Layer Equations in SI Units, 475

Empirical Estimation of Double-Layer Repulsive Force between Two Inclined Clay Particles of Finite Length, 399

Micromechanics Modeling for Stress-Strain Behavior of Granular Soils. I: Theory, 472

Micromechanics Modeling for Stress-Strain Behavior of Granular Soils. II: Evaluation, 473

Particle motion

Particle Motion in Rotary Screen, 190

Particle size

Effect of Particle Contact Bond on Shear Modulus, 430

Information Theory in Risk Analysis, 361

Particles

Bed-Load Transport on Transverse Slope. I, 499

Computational Laboratory for Discrete Element Geomechanics, 67

Empirical Estimation of Double-Layer Repulsive Force between Two Inclined Clay Particles of Finite Length, 399

Mechanics of Saltating Grains. II, 500

Motion of Contact-Load Particles at High Shear Stress, 568

Shear-Band Analysis in Idealized Granular Material, 178

Transport of Low-Level Radioactive Soil at Deep-Ocean Disposal Site, 312

Particulate media

Elastoplastic Deformation for Particulates with Frictional Contacts, 254

Partnerships

Howdy, Partner, 1147

Passive control

Aseismic Hybrid Control of Nonlinear and Hysteretic Structures I, 237

Aseismic Hybrid Control of Nonlinear and Hysteretic Structures II, 238

Vibration Control of Beams by Beam-Type Dynamic

Vibration Absorbers, 169

Wind Effects on Base-Isolated Structures, 255

Passive pressure

Passive pressure

Seismic Passive Resistance of Tied-Back Walls, 418

Pavement condition

Airfield Pavement Creep Failure Investigation, 719

The Connecticut Photolog Laser Videodisc-Based

Pavement Rating System, 983

Expert Systems: Ready to Hit the Road?, 1174

Integrated Pavement Management System for Kennedy International Airport, 1011

Pavement Performance and Life-Cycle Cost Analysis, 1

Predicting Vertical Acceleration in Vehicles Through Road Roughness, 970

Road and Airport Pavement Response Monitoring Systems, 1267

Pavement damage

Effect of Tire Parameters on Pavement Damage and Load-Equivalency Factors, 1019

Limiting Design Parameters for Accelerated Pavement-Testing System, 1018

Statistical Evaluation of Truck Overloads, 1010

Pavement deflections

AASHTO Direct Structural Capacity Method Error Analysis, 969

Pavement design

AASHTO Direct Structural Capacity Method Error Analysis, 969

Analysis and Design of Doweled Slab-on-Grade Pavement Systems, 1016

Expert Systems: Ready to Hit the Road?, 1174

Field Instrumentation and Performance Monitoring of Rigid Pavements, 990

Integrated Pavement Management System for Kennedy International Airport, 1011

International Air Transportation: A New International Airport, 1256

Laboratory versus Nondestructive Testing for Pavement Design, 980

Stochastic Model for Pavement Design, 1017

Variations in Measured Resilient Modulus of Asphalt Mixes, 697

Pavement deterioration

The Connecticut Photolog Laser Videodisc-Based Pavement Rating System, 983

Limiting Design Parameters for Accelerated Pavement-Testing System, 1018

Stochastic Model for Pavement Design, 1017

Unified Pavement Distress Index for Managing Flexible Pavements, 1012

Pavement joints

Dynamic Analysis of Rigid Airport Pavements with Discontinuities, 989

Field Instrumentation and Performance Monitoring of Rigid Pavements, 990

Pavement management systems

The Connecticut Photolog Laser Videodisc-Based Pavement Rating System, 983

Expert Systems: Ready to Hit the Road?, 1174

Integrated Pavement Management System for Kennedy International Airport, 1011

PMSC: Pavement Management System for Small Communities, 984

1992 ASCE TRANSACTIONS

Unified Pavement Distress Index for Managing Flexible Pavements, 1012

Pavement overlays

A European Road Comes to the U.S., 1159

Government-Industry Cooperation: Fast-Track Concrete Innovation, 117

Overlays on Deck, 1195

Pavements

AASHTO Direct Structural Capacity Method Error Analysis, 969

Dynamic Stiffness Analysis of Concrete Pavement Slabs, 1003

A European Road Comes to the U.S., 1159

Expert Systems: Ready to Hit the Road?, 1174

Histogram-Based Approach for Automated Pavement-Crack Sensing, 1013

Limiting Design Parameters for Accelerated Pavement-Testing System, 1018

Pavement Performance and Life-Cycle Cost Analysis, 1

Predicting Vertical Acceleration in Vehicles Through Road Roughness, 970

Quantification of Agency and User Values of Pavement Performance, 973

Road and Airport Pavement Response Monitoring Systems, 1267

Utilization of Waste Materials in Civil Engineering Construction, 1274

PCB

Loss of PCBs from Municipal-Sludge-Treated Farmland, 10

Model of Fate and Accumulation of PCB Homologues in Hudson Estuary, 14

Predicting Effluent PCBs From Superfund Site Dredged Material, 346

Peak runoff

Estimating Peak Flows from Small Agricultural Watersheds, 580

Peak values

Arc-Length Method for Passing Limit Points in Structural Calculation, 766

Peat

C_u/C_c Concept Applied to Compression of Peat, 434

Pedestrian traffic flow

Vibration of Pedestrian Overpass, 706

Pedestrians

Vibration of Pedestrian Overpass, 706

Penetration resistance

Postdensification Penetration Resistance of Clean Sands, 12

Penetration tests

Geotechnical Investigation Strategies for Lunar Base, 29

Pennsylvania

The Evolution of an Environmental Monitor, 1170

Perforating

Hydraulic Design of Perforated Breakwaters, 1077

Performance

Defects in Aluminum Windows and Impact on Dust and Air Infiltration, 705

Performance of Masonry Walls: Case Study in Kuwait, 678

Performance evaluation

Analysis of ARS Low-Drop Grade-Control Structure, 554

Evaluation of Flowable Fly-Ash Backfill. I: Static Loading, 389

Field Instrumentation and Performance Monitoring of Rigid Pavements, 990

Masonry Wall and Window System Leakage Investigation for University Building, 712

Pavement Performance and Life-Cycle Cost Analysis, 1

Performance Evaluation of Lake Shelbyville by Stochastic Dynamic Programming, 1047

Performance of Test Embankment Constructed to Failure on Soft Marine Clay, 369

Planning Operations of Bulk Loading Terminals by Simulation, 1099

Quantification of Agency and User Values of Pavement Performance, 973

Road and Airport Pavement Response Monitoring Systems, 1267

Roller Compacted Concrete III, 1268

Periodic functions

Kinematics of Nonlinear Random Waves near Free Surface, 279

Permeability

Drainage Efficiency of Sand Layer in Layered Clay-Sand Reclamation, 378

Effects of Freezing on Hydraulic Conductivity of Compacted Clay, 423

Effects of Porous Bed on Turbulent Stream Flow above Bed, 540

Evaluation of Collection-Well Parameters for DNAPL, 316

Hydraulic Conductivity of Noncohesive Soils, 439

Interaction of Inorganic Leachate with Compacted Pozzolanic Fly Ash, 444

Permeability of Roller Compacted Concrete, 674

Theory and Experiments on Subsurface Contaminant Sorption Systems, 326

Permits

Model for Prescribing Ground-Water Use Permits, 1069

Personnel development

Conflict Management Training for Today's Engineering Managers, 664

Issues in Human Resources: Managing Talent in the 21st Century, 666

Personnel management

Four Propositions for Quality Management of Design Organizations, 645

Issues in Human Resources: Managing Talent in the 21st Century, 666

Managing and Motivating People on a Joint Venture Project, 668

Perturbation

Nonlinear Free Vibration of Laminated Composite Plates, 164

Pesticides

The Greening of Greens, 1210

pH

Integrated Assessment of Acid-Deposition Effects on Lake Acidification, 313

Metallurgical Residue for Solubilization of Metals from Sewage Sludge, 355

pH Control in Anaerobic Treatment of Industrial Wastewater, 340

Phenol Removal from Kaolinite by Electrokinetics, 466

Phenol

Phenol Removal from Kaolinite by Electrokinetics, 466

Phosphorus

Impact of Flow Variability on Error in Estimation of Tributary Mass Loads, 331

Partitioning Phosphorus Loads: Implications for Lake Restoration, 1070

Phosphorus removal

Conditioning and Dewatering of Anaerobically Digested BPR Sludge, 345

Photoelasticity

Dynamic Stresses in Granular Assemblies with Microstructural Defects, 165

Novel Photoelastic Approach in Analysis of Elliptical Holes in Thick Plates, 250

Photogrammetry

GPS/Positioned Digital Video for Airborne GIS Data Acquisition, 963

Photogrammetric Solution for Vehicle-Damage Investigation, 1022

Photographs

The Connecticut Photolog Laser Videodisc-Based Pavement Rating System, 983

Physical properties

MSW Incinerator Ash as Aggregate in Concrete and Masonry, 698

Properties of Gypsum Wallboards Containing Fly Ash, 687

Piers

Assessing Time-Variant Bridge Reliability Due to Pier Scour, 519

Effects of Footing Location on Bridge Pier Scour, 485

Free Vibration Analysis of Curved Thin-Walled Girder Bridges, 918

Optimum Geometries for Pier-Type Airport Terminals, 979

Ports '92, 1263

Stability of Masonry Piers and Arches, 176

Temporal Variation of Scour Around Circular Bridge Piers, 532

Pile bearing capacities

Model Uncertainty Representation in Geotechnical Reliability Analyses, 384

Pile driving

Building KBES for Diagnosing PC Pile With Inductive Learning, 71

Driving Characteristics of Open-Toe Piles in Dense Sand, 372

Pipeline Response to Pile Driving and Adjacent Excavation, 383

Pile foundation design

Piles Under Dynamic Loads, 1262

Pile foundation performance

Pile Capacity for Axial Cyclic Loadings, 370

Pile foundations

Interactive Base-Isolation Foundation System: I. Finite Element Formulation, 277

Interactive Base-Isolation Foundation System: II. Parametric Study, 278

Nonlinear Soil-Pile Interaction Model for Dynamic Lateral Motion, 373

Piles Over Problems Sites, 1155

Piles Under Dynamic Loads, 1262

Pipeline Response to Pile Driving and Adjacent Excavation, 383

Pile groups

Dynamic Experiments on Two Pile Groups, 395

Efficiency Formula for Pile Groups, 382

Pile settlement

Further Contributions to Reliability-Based Pile-Settlement Analysis, 403

Pile tests

Dynamic Experiments on Two Pile Groups, 395

Piles

Analysis of Laterally Loaded Shafts in Rock, 408

Design of Bridge Pier Pile Foundations for Ship Impact, 877

Driving Characteristics of Open-Toe Piles in Dense Sand, 372

Dynamic Experiments on Two Pile Groups, 395

Efficiency Formula for Pile Groups, 382

Loss of Ground During CFA Pile Installation in Inner Urban Areas, 416

Pile Capacity for Axial Cyclic Loadings, 370

Scour Around a Vertical Pile in Waves, 1078

Pine wood

Determination of Fracture Toughness for Wood, 853

Pipe flow

Dimensionally Homogeneous Manning's Formula, 548

Transportation of Demineralized Water: Case Study, 1005

Pipe networks

Efficient Calculation of Transient Flow in Simple Pipe Networks, 527

Leaks in Pipe Networks, 528

Pipelines

Calculating Flow in Manifold and Orifice System, 342

Dallas Goes Trenchless, 1203

Efficient Calculation of Transient Flow in Simple Pipe Networks, 527

Influence of Liquid Length Variation in Hydraulic Transients, 566

Perils of Point Loma, 1221

Pipeline Response to Pile Driving and Adjacent Excavation, 383

State-Space Analysis and Control of Slow Transients in Pipes, 544

Pipes

Construction of Grout-Impregnated Fabric-Reinforced Pipes, 107

Laboratory Testing of Ultimate Capacity of Dented Tubular Members, 818

Leaks in Pipe Networks, 528

Piping, erosion

Mathematical Model for Piping, 415

Piping systems

Comparing Object-Oriented and Relational Data Models for Project Control, 79

Plane strain

Evaluation of Plastic Bifurcation for Plane Strain versus Axisymmetry, 184

Pressure of Crushed Ice as Mohr-Coulomb Material Against Flat, Axisymmetric Indentor, 58

Plane waves

Influence of Seafloor on Acoustic Plane Wave, 273

Planning

Conjunctive-Use Planning in Mad River Basin, California, 1043

Evaluation Method for Advanced Acid Rain Compliance Technology, 142

Issues in Hydropower Modeling Using GEMSLP Algorithm, 1039

Microcomputer-Based Project Management for Small Engineering Firms, 648

Planning and Management of Water-Resource Systems in Developing Countries, 1072

Planning Simulation Model of Irrigation District, 576

Planning Your Negotiation, 660

Simulating THM Formation Potential in Sacramento Delta: Part I, 1067

Simulating THM Formation Potential in the Sacramento Delta: Part II, 1068

Systems-Engineering Methodology for Engineering Planning Applications, 734

Visioning: The Future of Civil Engineering, 740

Water Resource Systems Models: Their Role in Planning, 1048

Plastic analysis

Analysis for Soil Reinforcement with Bending Stiffness, 448

Simple Rigid Plastic Model for Seismic Tilting of Rigid Walls, 782

Plastic hinges

Moving Hinge in Large-Displacement Problems, 263

Plastic properties

Collapse Mode of Elastic-Plastic Structures, 217

Equivalent Linearization for Seismic Responses. I: Formulation and Error Analysis, 289

Plasticity

Anisotropic Plasticity Model for Undrained Cyclic Behavior of Clays. I: Theory, 379

Anisotropic Plasticity Model for Undrained Cyclic Behavior of Clays. II: Verification, 380

Associative Plasticity for Dilatant Soils, 200

Comparative Evaluation of Plasticity Theories against Tension-Torsion Test at Finite Strain, 281

Compressive Softening Model for Concrete, 245

Constitutive Model for Concrete in Strain Space, 268

Dynamic Analysis of Elastoplastic Softening Discretized Structures, 297

Dynamic Elastic-Plastic Buckling Behavior Illustrated by Simple Model, 274

Engineering Behavior of Water Treatment Sludge, 358

Free Boundary, Fluid Flow, and Seepage Forces in Excavations, 375

Generalized Creep and Stress Relaxation Model for Clays, 462

Load Shortening in Plastic Buckling of Cylinders, 267

Moving Hinge in Large-Displacement Problems, 263

Numerical Study of Soil Anisotropy, 167

Strain-Based Constitutive Model with Mixed Evolution Rules for Concrete, 223

Plastics

Collapse Mode of Elastic-Plastic Structures, 217

Materials: Performance and Prevention of Deficiencies and Failures, 1260

Overlays on Deck, 1195

Winter Operability: Equipment Problems and Their Remedies, 57

Plates

Analysis of Thick Circular Plates Undergoing Large Deflections, 25

Bending of Thin Plate with Three-Point Support, 838

Boundary-Continuous Fourier Solution for Clamped Mindlin Plates, 239

Buckling of Skew Plates and Corner Condition for Simply Supported Edges, 193

Critical Review of Thin-Plate Stability Equations, 182

Destabilizing Effect of Magnetic Damping in Plate Strip, 163

Effects of Dead Loads in Dynamic Plates, 759

Elastic Buckling Coefficients for Long, Unstiffened Plates, 305

Elastic Buckling of Incomplete Composite Plates, 154

Elastic Buckling of Rectangular Plates with Curved Internal Supports, 841

Fundamental Frequency of Tapered Plates by Differential Quadrature, 225

Hypar Shell on Pasternak Foundation, 230

Improved Rectangular Element for Shear Deformable Plates, 173

Mechanics of Shape Optimization in Plate Buckling, 227

New Spline Finite Element for Plate Bending, 216

Nonlinear Free Vibration of Laminated Composite Plates, 164

Novel Photoelastic Approach in Analysis of Elliptical Holes in Thick Plates, 250

Response of Plates of Arbitrary Shape Subject to Static Loading, 260

Simultaneous Design and Control of Stiffened Laminated Composite Structures, 23

Stiffened Sheathings of Orthotropic Cylindrical Shells, 808

Tests of Cold-Formed Channels with Local and Distortional Buckling, 857

Thermomechanical Buckling of Multilayered Composite Plates, 175

Transition Plate-Bending Elements for Compatible Mesh Gradation, 181

Plumes

Destruction of Stratification By Bubble Plume, 501

Mixing, Dispersion, and Resuspension in Vicinity of Ocean Wastewater Plume, 478

Plunging flow

Density Currents Entering Lakes and Reservoirs, 557

Use of Density Current to Modify Thermal Structure of TVA Reservoirs, 506

Pneumatic systems

Large-Scale Loading Tests of Shallow Footings in Pneumatic Caisson, 457

Point pollution

Controlling Nitrogen in Coastal Waters, 1142

Poisson ratio

Compressive Behavior of Glass-Fiber-Reinforced Polymer Concrete, 679

Finite Element Modeling of Concrete Expansion and Confinement, 890

Probability of Crack Growth in Poisson Field of Penny Cracks, 210

Poles

The Crown and the Curtain Wall, 1194

Policies

Irrigation and Drainage—Systems Policy Analysis and India Case Study, 1064

Reservoir Management and Thermal Power Generation, 1061

Utilization of Waste Materials in Civil Engineering Construction, 1274

Political factors

Critical Issues for Engineering Managers, 658

Pollutants

Application of Three-Dimensional Lagrangian Residual Transport, 516

Estuarine and Coastal Modeling, 1247

Storm Runoff Detention for Pollutant Removal, 329

Pollution

Longitudinal Dispersion Coefficients in Estuary, 508

Storm-Water Detention Storage Design under Random Pollutant Loading, 1065

Water, Endangered Ecosystem: Assessment of Chemical Pollution, 335

Pollution abatement

Electrokinetic Cleanups, 1211

Modeling of Soil Venting Processes to Remediate Unsaturated Soils, 314

Pollution control

Controlling Nitrogen in Coastal Waters, 1142

Partitioning Phosphorus Loads: Implications for Lake Restoration, 1070

Polycrystalline

Necking of Creep-Cavitating Bars, 199

Polygons

Local and Interaction Buckling of Polygonal Section Steel Columns, 904

Polymer concretes

Compressive Behavior of Glass-Fiber-Reinforced Polymer Concrete, 679

Polymers

Polymers

- Compressive Behavior of Glass-Fiber-Reinforced Polymer Concrete, 679
- Novel Photoelastic Approach in Analysis of Elliptical Holes in Thick Plates, 250

Overlays on Deck, 1195

- Removing Selenium(IV) and Arsenic(V) Oxyanions with Tailored Chelating Polymers, 352

Polynomials

- Response of Plates of Arbitrary Shape Subject to Static Loading, 260

Ponding

- Horton Infiltration Equation Revisited, 630

Ponds

- Design and Operation of On-Farm Irrigation Ponds, 618

Pools

- Modeling Low-Flow Mixing through Pools and Rifles, 553

- Swimming Pools Supported by Dissimilar Bearing Strata, 713

Population statistics

- Comprehensive Regional Socioeconomic Simulation System, 1030

- Estimating Functional Population for Facility Planning, 1027

Pore pressure

- Density Changes During Undrained Loading—Membrane Compliance, 470

- Membrane Compliance and Liquefaction of Sluiced Gravel Specimens, 409

Pore water pressure

- Modeling Anisotropy of Clays at Critical State, 201
- Wave-Induced Effective Stress in Seabed and Its Momentary Liquefaction, 1091

Porosity

- Drawdown Solutions with Variable Drainable Porosity, 599

- Dynamics of Saturated Rocks. IV: Column and Borehole Problems, 261

- Factors Controlling Properties and Durability of Concretionary Laterite Gravel Aggregates, 676

- Flow-Deformation Response of Dual-Porosity Media, 374

- Reflection and Transmission of Water Wave by Porous Breakwater, 1106

Porous materials

- Influence of Seafloor on Acoustic Plane Wave, 273

Porous media

- Chloride Binding Capacity in Cement-Fly-Ash Pastes, 673

- Flow-Deformation Response of Dual-Porosity Media, 374

- Predictions of Thermal Characteristics for Mixed Porous Media, 685

Portland cements

- Micromechanics-Based Constitutive Model for Interface Shear, 231

1992 ASCE TRANSACTIONS

Ports

- Conflict of Interest in Deep-Draft Anchorage Usage—Application of QT, 1082

- Creating Wetlands, 1186

- Many Engineering Issues and Challenges Met in Development of Hong Kong, 731

- Planning Operations of Bulk Loading Terminals by Simulation, 1099

- Ports '92, 1263

- Ship-Berth Link as Bulk Queuing System in Ports, 1108

Positioning

- Integrated GPS-INS for High-Accuracy Road Positioning, 965

- Laptop Automated Navigation Aid Positioning System with Differential GPS, 967

Postbuckling behavior

- Postbuckling of Polar Orthotropic Circular Plates—Retrospective, 280

- Postbuckling Response Simulations of Laminated Anisotropic Panels, 40

Potable water

- Evaluation of Ozone Disinfection Systems: Characteristic Concentration C, 336

Power

- Power Flow and Energy in Primary-Secondary Systems, 215

Power spectral density

- Predicting Vertical Acceleration in Vehicles Through Road Roughness, 970

Power supplies

- Lifeline Earthquake Engineering in the Central and Eastern U.S., 1259

Powerplants

- Evaluation Method for Advanced Acid Rain Compliance Technology, 142

- Novel Combined-Cycle Low-Temperature Engine System, 153

- The OCEA Awards of Merit, 1178

Precipitation

- Effect of Collector Dosage on Metal Removal by Precipitation/Flotation, 363

- Estimating Peak Flows from Small Agricultural Watersheds, 580

Precipitation, atmospheric

- BEST: New Satellite Mission Dedicated to Tropical System Energy Budget, 15

Predictions

- Collapse Mode of Elastic-Plastic Structures, 217

- Dynamic Response Analysis of Reinforced-Soil Retaining Wall, 426

- Multivariable Analysis Using Isoparametric Finite Elements, 256

- Predicting Behavior of Cyclically Loaded RC Structures, 790

- Predicting Construction Contractor Failure prior to Contract Award, 138

- Predicting Effluent PCBs From Superfund Site Dredged Material, 346

- Prediction Method for Local Scour by Warmed Cooling-Water Jets, 537

Prediction of Natural Channel Hydraulic Roughness, 615

Soil Suction-Potential Model, 392

Prefabrication

Engineering Pre-engineered Buildings, 1199

Potential Gains Through Welded-Wire Fabric Reinforcement, 104

Pressure distribution

Fluctuating Uplift and Lining Design in Spillway Stilling Basins, 502

Pressure measurement

Leaks in Pipe Networks, 528

Pressure reduction

Constant Hole-Spacing Trail Tubes, 583

Pressures

Buckle Propagation in Submarine Pipelines, 288

Design: Implications of Measured Pressures and Strains in Silos, 909

Influence of Liquid Length Variation in Hydraulic Transients, 566

Interaction of Steep Waves with Vertical Walls, 1107

Prestressing

Effectiveness of Seismic Strengthening Techniques for Masonry Buildings, 863

Parametric Study of Continuous Prestressed Composite Girders, 767

Prestress Influence on Shear-Lag Effect in Continuous Box-Girder Bridge, 932

Prestressed Composite Girders. I: Experimental Study for Negative Moment, 910

Prestressed FRP Sheets as External Reinforcement of Wood Members, 829

Strength and Behavior of Slender Steel Pipe under Prestressing Force, 919

Prices

Price Effects of Landfills on Residential Land Values, 1034

Private sector

The Evolution of an Environmental Monitor, 1170

Probabilistic methods

Bidding Strategy: Winning over Key Competitors, 99

Conditional and Joint Failure Surface Crossing of Stochastic Processes, 262

Engineering Mechanics, 1245

Evaluation of System-Reliability Methods for Cable-Stayed Bridge Design, 820

Probabilistic Stability Analysis for Deep-Water Foundation, 386

Reliability-Based Pier Scour Engineering, 549

Stochastic FEM Based on Local Averages of Random Vector Fields, 183

Variation of Velocity Distribution along Nonuniform Open-Channel Flow, 525

Probabilistic models

Evaluation Method for Advanced Acid Rain Compliance Technology, 142

Modeling Stiffness Degradation in Filamentary Composite Materials, 686

Optimizing Launch-on-Time Probability, 41

Probability

Conditional and Joint Failure Surface Crossing of Stochastic Processes, 262

Dealing with Uncertainty: From Health-Risk Assessment to Environmental Decision Making, 144

Evaluation of Probabilities Using Orientated Simulation, 852

Improved First-Order Uncertainty Method for Water-Quality Modeling, 354

Information Theory in Risk Analysis, 361

Load-Space Formulation for Time-Dependent Structural Reliability, 204

Modeling Bridge Deterioration with Markov Chains, 1020

Probabilistic Environmental Risk of Hazardous Materials, 360

Probabilistic Mechanics and Structural and Geotechnical Reliability, 1264

Reliability Analysis of Truss Structures with Multi-state Elements. II, 807

Statistical Evaluation of Truck Overloads, 1010

Storm-Water Detention Storage Design under Random Pollutant Loading, 1065

TMDS for Vibration Control of Systems with Uncertain Properties, 944

Wind-Induced Response of Structurally Asymmetric High-Rise Buildings, 768

Probability distribution

Acquisition of Expert Judgment: Examples from Risk Assessment, 148

Including Uncertainty of Hydraulic Conductivity into Drainage Design, 624

Probability Distribution for Benefit/Cost Ratio and Net Benefit, 1044

Stochastic Model for Soil Moisture Deficit in Irrigated Lands, 608

Probability distribution functions

Model Uncertainty Representation in Geotechnical Reliability Analyses, 384

Probability theory

ASCE LRFD Method for Stainless Steel Structures, 817

Equivalent Linearization for Seismic Responses. I: Formulation and Error Analysis, 289

Limit-State Interactions in Reliability-Based Design for Wood Structures, 802

Modeling Irrigation Schedules for Lowland Rice with Stochastic Rainfall, 573

Point-Estimate Method for Calculating Statistical Moments, 242

Probabilistic Design of Open Drainage Channels, 633

Reliability of Geometrically Nonlinear PR Frames, 285

Roof-Snow Load for Seismic-Design Calculations, 887

Probes, instruments

Precision of Evapotranspiration Estimates Using Neutron Probe, 638

Problem solving

Path-Finder: AI-Based Path Planning System, 66

Reflection in Problem Solving and Design, 741

SightPlan Model for Site Layout, 135

Problem solving

Systems Analysis Applications at Hydrologic Engineering Center, 1051

Procedures

Acquisition of Expert Judgment: Examples from Risk Assessment, 148

Process control

Gas Phase Control for Oxygen-Activated Sludge, 330

Processing

Controlling Pulsed Incompressible Flow, 140

Object-Oriented Model of Engineering Design Standards, 78

Productivity

Automating The Corps, 1156

Comparison of Labor Productivity, 127

Consequential Equipment Costs Associated with Lack of Availability and Downtime, 13

Construction of Pressurized, Self-Supporting Membrane Structure on Moon, 34

Effects of Scheduled Overtime on Labor Productivity, 93

Financial Incentive Programs for Average-Size Construction Firm, 129

Making Teamwork Work, 1137

Nonmonetary Incentives: It Can Be Done, 647

Site-Level Construction Information System, 132

Small Utility GIS, 1223

Using Quality Circles to Raise Productivity and Quality of Work Life, 90

Professional advancement

Visioning: The Future of Civil Engineering, 740

Professional development

Challenges of The Changing Profession, 724

Civil Engineering Experience and Education, 732

Portrait of a Manager, 1191

Professionalism: Cornerstone of Engineering, 744

Professional engineering

Professionalism: Cornerstone of Engineering, 744

Professional personnel

Issues in Human Resources: Managing Talent in the 21st Century, 666

Professional practice

Challenges of The Changing Profession, 724

Civil Engineers Shaping Society: Our Social Responsibilities, 725

Critical Issues for Engineering Managers, 658

Educational Needs of Civil Engineers in Management, 657

Practitioner Involvement with Engineering Ethics and Professionalism, 729

Risk Reduction Through Indemnification Contract Clauses, 662

Systems Analysis in Water-Distribution Network Design: From Theory to Practice, 1050

Technology is Here—Are You Ready?, 661

Upgrading the First Professional Degree, 750

Using Expert Systems to Manage Professional Survey Practices, 961

Visioning: The Future of Civil Engineering, 740

1992 ASCE TRANSACTIONS

Professional registration

Practitioner Involvement with Engineering Ethics and Professionalism, 729

Professional role

Cost and Quality Management, 654

Depositions and Trial Testimony, A Positive Experience?, 735

Engineering Issues for Early Lunar-Based Telescopes, 38

Engineering Pre-engineered Buildings, 1199

Future Concerns in Environmental Engineering Graduate Education, 752

Introduction to Ownership and Transition. I: Ownership Transfer Considerations, 669

Profile measurement

Hydraulic Geometry of Threshold Channels, 503

Profiles

Prediction of Storm/Normal Beach Profiles, 1090

Seismic Response of R/C Frames with Irregular Profiles, 786

Profits

Managing for Profit, 1224

Programming

Optimal Locations of Monitoring Stations in Water Distribution System, 306

Progressive failure

Discrete Element Method for Slope Stability Analysis, 468

Investigation of L'Ambiance Plaza Building Collapse, 720

Project control

Comparing Object-Oriented and Relational Data Models for Project Control, 79

Project evaluation

Critical Success Factors for Construction Projects, 95

Project management

Aspects of Virtual Master Builder, 745

Boston's City within a City, 1206

Collective Excellence: Building Effective Teams, 1238

Construction Project Planning Process Model for Small-Medium Builders, 128

Cost and Quality Management, 654

Cranes, Concrete, Construction...and Computers, 1167

Critical Success Factors for Construction Projects, 95

The Heartbeat of the Artery, 1120

Knowledge-Based Advisory System for Public-Sector Design-Build, 85

Lessons Learned—Milwaukee Water Pollution Abatement Program, 656

Managing for Profit, 1224

Manholes and Microtunneling, 1228

Microcomputer-Based Project Management for Small Engineering Firms, 648

Project Management: Keys to Success, 1153

Project Management Oversight—Good Tool for Program Managers, 659

Project managers

Managing for Profit, 1224

SUBJECT INDEX

- Staffing Up for a Major Program, 1124
- Project planning**
 - Construction Project Planning Process Model for Small-Medium Builders, 128
 - Critical Success Factors in Winning BOT Contracts, 102
 - Knowledge-Based Advisory System for Public-Sector Design-Build, 85
 - Lessons Learned—Milwaukee Water Pollution Abatement Program, 656
 - Project Management: Keys to Success, 1153
- Projectile impact**
 - Projectile Shape and Material Effects in Hypervelocity Impact Response of Dual-Wall Structures, 43
- Property values**
 - Positive Influence of Impact-Fee Policy in Urban Planning and Development, 1028
 - Price Effects of Landfills on Residential Land Values, 1034
- Protective coatings**
 - Transportation of Demineralized Water: Case Study, 1005
- Protective structures**
 - Taming Tornado Alley, 1176
- Prototype tests**
 - Computer-Controlled Brick Masonry, 68
- Public information programs**
 - Identification of Inappropriate Driving Behaviors, 985
- Public participation**
 - High Level Radioactive Waste Management, 1253
 - Planning Water Supply and Sanitation Projects in Developing Countries, 1058
 - Socioeconomic Accounting in Construction, 738
- Public policy**
 - California's Tradable Emissions Policy and Greenhouse Gas Control, 143
 - Lessons Not Learned from 1989 Loma Prieta Earthquake, 736
- Public service**
 - Accessibility of Public Services in Irbid, Jordan, 1024
- Public transportation**
 - Accessibility of Public Services in Irbid, Jordan, 1024
 - The Last Freeway, 1162
- Public works**
 - Accessibility of Public Services in Irbid, Jordan, 1024
 - Civil Engineers Shaping Society: Our Social Responsibilities, 725
 - Design-Build Goes Public, 1184
 - Hong Kong Port Facilities, Airport, and Housing Require New Concepts, 755
 - Impact Fees: Practical Guide for Calculation and Implementation, 1032
 - Many Engineering Issues and Challenges Met in Development of Hong Kong, 731
 - A New Fast Track for Public Works, 1129
- Pull-out resistance**
 - Fracture Toughness for Steel Fiber-Cement Paste Interfacial Zone, 688

Quality control - management

- Pullout Stiffness of Elastic Anchors in Slope Stabilization Systems, 412
- Pullout Tests Using Steel Grid Reinforcements with Low-Quality Backfill, 421
- Pultrusion**
 - Short-Term Behavior of Pultruded Fiber-Reinforced Plastic Frame, 866
- Pump turbines**
 - Effect of Thickness Distribution on Performance of S-Cambered Profiles, 150
- Pumped storage**
 - The OCEA Awards of Merit, 1178
- Pumping**
 - Optimal Pump Scheduling in Water-Supply Networks, 1062
- Pumping stations**
 - Automated Operation of Pumping Stations in Russia, 610
 - Turning on the Waterworks, 1190
- Quadratic formulas**
 - Conversion Between Quadratic and Power Law for Non-Darcy Flow, 513
- Quadratic programming**
 - Elastic Analysis of Submarine Pipelines, 762
 - Frictionless Contact with BEM Using Quadratic Programming, 266
- Qualifications**
 - Experience-Based Issues in Construction Education, 754
 - Risk Analysis Approach to Selection of Contractor Evaluation Method, 139
- Quality assurance**
 - Causes of Quality Deviations in Design and Construction, 91
 - Civil Engineering Education in Ecuador, 756
 - Management's Fatal Flaw: TQM Obstacle, 650
 - Owner Involvement in Construction Projects in Saudi Arabia, 655
 - Potential Gains Through Welded-Wire Fabric Reinforcement, 104
 - Quality Management Organizations and Techniques, 96
- Quality control**
 - Compaction Quality Control in Granular Shell of Earth Dam, 433
 - Constructability for Drilled Shafts, 94
 - Corrosion Cracking in Relation to Bar Diameter, Cover, and Concrete Quality, 696
 - Cost and Quality Management, 654
 - Four Propositions for Quality Management of Design Organizations, 645
 - Learning to Love NDT, 1121
 - Owner Involvement in Construction Projects in Saudi Arabia, 655
 - Project Management: Keys to Success, 1153
- Quality control - management**
 - ADR, TQM, Partnering, and Other Management Fantasies, 749
 - Implementation of TQM in Building Design and Construction, 665

Quarries

Durability of Stone for Rubble Mound Breakwaters, 1242

Queueing

Conflict of Interest in Deep-Draft Anchorage Usage—Application of QT, 1082

Ship-Berth Link as Bulk Queueing System in Ports, 1108

Radar

Structural Design of Lunar Radio Telescope Using Interactive CAD, 16

Radiation

Estimation of Daytime Net Radiation Over Well-Watered Grass, 604

Radiation Energy Treatment of Water, Wastewater and Sludge: A State-of-the-Art Report, 1265

Synchrotron Radiation Measurements of Degree of Saturation in Porous Matrix, 257

Torsional Radiation Damping of Arbitrarily Shaped Embedded Foundations, 428

Radioactive waste disposal

High Level Radioactive Waste Management, 1253

Radioactive wastes

Dynamic Compaction of Nuclear Waste, 1144

High Level Radioactive Waste Management, 1253

Radioisotopes

Transport of Low-Level Radioactive Soil at Deep-Ocean Disposal Site, 312

Rail transportation

Future Impact of Trucking Reform on Railway Revenue, 1015

Rail Revival, 1118

Railroad engineering

Rehabbing the Rails, 1198

Railroad stations

Commercial Uses of Land Around Urban Railway Stations in Greece, 1033

Railroad terminals

Exchange Place Station Subsurface Reconstruction and Improvements, 100

Railroad tracks

Rail Revival, 1118

Rehabbing the Rails, 1198

Railroads

Design of Flood Protection for Transportation Alignments on Alluvial Fans, 595

Rail Revival, 1118

Transportation for Hong Kong Requires Solutions to Issues and Problems, 748

Urban Transit Guides Application of Advanced Train Control, 977

Rails

Rail Revival, 1118

Reinforced Sand Behavior Overlying Compressible Subgrades, 456

Rain gages

Rainfall Area Identification Using GOES Satellite Data, 584

Rainfall

Adaptation of Horton and SCS Infiltration Equations to Complex Storms, 591

Calibrating SHE Soil-Erosion Model for Different Land Covers, 621

Modeling Irrigation Schedules for Lowland Rice with Stochastic Rainfall, 573

Modeling Monsoon-Affected Rainfall of Pakistan by Point Processes, 1076

Rainfall Area Identification Using GOES Satellite Data, 584

Rainfall Intensity-Duration-Frequency Formula for India, 488

Rainfall duration

Rainfall Intensity-Duration-Frequency Formula for India, 488

Rainfall frequency

Jury Verdict: Frequency versus Risk-Based Culvert Design, 1046

Rainfall Intensity-Duration-Frequency Formula for India, 488

Rainfall intensity

Horton Infiltration Equation Revisited, 630

Rainfall Intensity-Duration-Frequency Formula for India, 488

Random processes

Probabilistic Mechanics and Structural and Geotechnical Reliability, 1264

Recursive Parameter Estimation for ARMA Simulations, 304

Response Variability of Structures Subjected to Bifurcation Buckling, 222

Risk Consistent Estimate of Heat-Straightening Applications. I: Plates, 951

Risk Consistent Estimate of Heat-Straightening Applications. II: Beams, 952

Simulation-Based Excursion Statistics, 220

Random variables

Monte Carlo Technique with Correlated Random Variables, 105

Point-Estimate Method for Calculating Statistical Moments, 242

Stochastic FEM Based on Local Averages of Random Vector Fields, 183

TMDs for Vibration Control of Systems with Uncertain Properties, 944

Random vibration

Control of Along-Wind Response of Structures by Mass and Liquid Dampers, 155

Equivalent Linearization for Seismic Responses. I: Formulation and Error Analysis, 289

Nonstationary Response of Structures with Closely Spaced Frequencies, 235

Power Flow and Energy in Primary-Secondary Systems, 215

Random Vibration under Propagating Excitation: Closed-Form Solutions, 188

Response of Systems with Uncertain Parameters to Stochastic Excitation, 213

Wind Effects on Base-Isolated Structures, 255

Wind-Induced Response of Structurally Asymmetric High-Rise Buildings, 768

Random waves

- Irregular Wave Setup and Run-up on Beaches, 1102
- Kinematics of Nonlinear Random Waves near Free Surface, 279
- Laboratory Simulations of Directionally Spread Shoaling Waves, 1083
- Modal and Wave Load Identification by ARMA Calibration, 228
- Wave Runup and Forces on Cylinders in Regular and Random Waves, 1116

Rangeland

- Hydraulic Roughness Coefficients for Native Rangelands, 626

Rapid transit railways

- Exchange Place Station Subsurface Reconstruction and Improvements, 100
- Performance of Viaduct Girders under Static and Dynamic Loads, 711

Rapid transit systems

- Bored Tunneling for Singapore Metro, 112

Ratings

- Residual Deformation Analysis for Inelastic Bridge Rating, 842

Rayleigh waves

- Effects of Multiple Modes on Rayleigh Wave Dispersion Characteristics, 449
- Use of Short-Period Microtremors for V_s Profiling, 450

Real-time programming

- Traffic Signal Using Mixed Controller Operations, 1023

Recreational facilities

- The Greening of Greens, 1210

Recruiting

- Future Resources for Engineering, 727
- Providing Lead Role in Work-Force Diversity, 728
- Strategies to Stem Declining Engineering Enrollments, 743
- Women in Civil Engineering—Graduate's Perspective, 726

Rectangular cross section

- Bending of Rectangular Cross-Section Cantilever with Cylindrical Cutouts, 203

Rectangular hollow sections

- Weldment Design for RHS Truss Connections. I: Applications, 912
- Weldment Design for RHS Truss Connections. II: Experimentation, 913

Recycling

- The Environment is Good Business in France, 1145
- Optimal Scheduling of Consecutive Landfill Operations with Recycling, 332
- Use of Scrap Tires in Road Construction, 123

Refuse derived fuel

- Partitioning of Elements by Refuse Processing, 350

Refuse disposal

- Partitioning of Elements by Refuse Processing, 350

Regional analysis

- Comprehensive Regional Socioeconomic Simulation System, 1030
- Rainfall Intensity-Duration-Frequency Formula for India, 488

Regional development

- Method for Preevaluation and Selection of Road Projects in Gabon, 978

Registration

- ASCE Should Have a Construction Safety Committee, 730
- Visioning: The Future of Civil Engineering, 740

Regression analysis

- Conversion Between Quadratic and Power Law for Non-Darcy Flow, 513
- Optimization and Simulation of Multiple Reservoir Systems, 1040
- Simplified Building Analysis with Sequential Dead Loads—CFM, 809

Regression models

- Improved Techniques in Regression-Based Streamflow Volume Forecasting, 1075

Regulations

- Earthquakes: A New Look at Cracked Masonry, 1219
- Housing America in the Twenty-First Century, 1254
- Piles Over Problems Sites, 1155

Rehabilitation

- Analysis and Design Models for Structural Concrete Bridge Deck Overlays, 8
- Dallas Goes Trenchless, 1203
- Dams Going Safely over the Top, 1122
- Design-Basis Flood for Rehabilitation of Existing Dams, 486
- Excavation and Support for the Urban Infrastructure, 1248
- Exchange Place Station Subsurface Reconstruction and Improvements, 100
- A Face-Lift for Lincoln, 1200
- Future Trends and Needs in Hydraulics, 564
- Guidelines for Rehabilitation of Civil Works of Hydroelectric Plants, 1252
- Horizontal Load Transfer in Structural Concrete Bridge Deck Overlays, 9
- Hysteretic Response of Reinforced-Concrete Infilled Frames, 876
- Optimal Long-Term Scheduling of Bridge Deck Replacement and Rehabilitation, 987
- Overlays on Deck, 1195
- Ports '92, 1263
- Rail Revival, 1118
- Rehabbing the Rails, 1198
- Rehabilitation of Infrastructure in Infill Sites, 753
- Roller Compacted Concrete III, 1268
- Seattle Plays It Safe, 1187
- Tunnel Takes Cathodic Protection, 1220
- Water Resources Planning and Management: Saving a Threatened Resource—In Search of Solutions, 1275

Reinforcement

- Bearing Capacity on Nonhomogeneous Cohesive Soils under Embankments, 424

Reinforcement

- Construction of Grout-Impregnated Fabric-Reinforced Pipes, 107
- Designing Reinforced Rock, 1125
- Effectiveness of Seismic Strengthening Techniques for Masonry Buildings, 863
- Flexural Strength of Sand-Reinforced Ice, 3
- Hysteretic Behavior of Anchorage Slip in R/C Members, 893
- Moisture Effects on Flexural Performance of Wood Fiber-Cement Composites, 692
- Out-of-Plane Seismic Response of Reinforced Masonry Walls, 896
- Potential Gains Through Welded-Wire Fabric Reinforcement, 104
- Prestressed FRP Sheets as External Reinforcement of Wood Members, 829
- Pullout Tests Using Steel Grid Reinforcements with Low-Quality Backfill, 421
- Reinforced Sand Behavior Overlying Compressible Subgrades, 456
- Retaining Wall With Reinforced Cohesionless Backfill, 467
- Softening and Snap-Through Behavior of Reinforced Elements, 246
- Stability Analysis of Reinforced Embankments on Soft Soils, 474

Reinforcing steels

- Nonlinear Cyclic Behavior of Reinforcing Bars Including Buckling, 943
- Rebar Corrosion in $MgSO_4$ Solution, 693
- Strength and Corrosion Resistance of Superplasticized Concretes, 680

Reliability

- Further Contributions to Reliability-Based Pile-Settlement Analysis, 403
- Limit-State Interactions in Reliability-Based Design for Wood Structures, 802
- Moisture Content and Reliability-Based Design for Wood Members, 955
- Optimization-Availability-Based Design of Water-Distribution Networks, 494
- Probabilistic Design of Open Drainage Channels, 633
- Probabilistic Mechanics and Structural and Geotechnical Reliability, 1264
- Reliability of Bolted Wood Connections, 949
- Risk Consistent Estimate of Heat-Straightening Applications. I: Plates, 951
- Risk Consistent Estimate of Heat-Straightening Applications. II: Beams, 952
- Seattle Plays It Safe, 1187
- Simulation-Based Excursion Statistics, 220
- Stochastic Model for Pavement Design, 1017

Reliability analysis

- Assessing Time-Variant Bridge Reliability Due to Pier Scour, 519
- Calibration Strategy for Urban Catchment Parameters, 562
- Conditional and Joint Failure Surface Crossing of Stochastic Processes, 262
- Model Uncertainty Representation in Geotechnical Reliability Analyses, 384
- Optimal Importance-Sampling Density Estimator, 221

1992 ASCE TRANSACTIONS

- Reliability Analysis of Creep and Shrinkage Effects, 886
- Response of Systems with Uncertain Parameters to Stochastic Excitation, 213
- Shakedown Limit State of Compact Steel Girder Bridges, 812
- Stochastic Model for Pavement Design, 1017
- Uncertainty and Reliability Analysis of Jacket Platform, 907
- Remote sensing**
 - Rainfall Area Identification Using GOES Satellite Data, 584
- Renovation**
 - Mining for Building Expansion, 1227
 - Rehabbing the Rails, 1198
- Repairing**
 - Earthquakes: A New Look at Cracked Masonry, 1219
 - Fill-Slope Failure and Repair, 717
 - Guidelines for Rehabilitation of Civil Works of Hydroelectric Plants, 1252
 - Histogram-Based Approach for Automated Pavement-Crack Sensing, 1013
 - Perils of Point Loma, 1221
 - Risk Consistent Estimate of Heat-Straightening Applications. I: Plates, 951
 - Risk Consistent Estimate of Heat-Straightening Applications. II: Beams, 952
- Repeated loading**
 - Reinforced Sand Behavior Overlying Compressible Subgrades, 456
- Research**
 - A Challenge for Research, 115
 - The Roads Ahead, 1152
 - Systems Analysis in Water-Distribution Network Design: From Theory to Practice, 1050
- Research and development**
 - Education and Research in Japan's Construction Industry, 747
 - A New Era In Transportation, 1148
 - Nondestructive Testing of Concrete Elements and Structures, 1261
 - R&D Cooperation by Swedish Contractors, 89
 - The Roads Ahead, 1152
 - Strategies for Technology Push: Lessons from Construction Innovations, 120
 - Underground Research: Here and There, 1229
- Research needs**
 - Research Needs Related to Forensic Engineering of Constructed Facilities, 704
- Reservoir design**
 - Predicting Sediment Loads, 1213
- Reservoir operation**
 - Issues in Hydropower Modeling Using GEMSLP Algorithm, 1039
 - Multireservoir Sewer-Network Control via Multivariable Feedback, 1071
 - Operation of Large Multireservoir Systems Using Optimal-Control Theory, 1060
 - Optimization and Simulation of Multiple Reservoir Systems, 1040

SUBJECT INDEX

Retaining walls

- Optimization of Real-Time Hydrothermal System Operation, 1074
- Performance Evaluation of Lake Shelbyville by Stochastic Dynamic Programming, 1047
- Planning Simulation Model of Irrigation District, 576
- Reservoir Sedimentation. II: Reservoir Desiltation and Long-Term Storage Capacity, 491
- Reservoir Systems Analysis: Closing Gap Between Theory and Practice, 1052
- Reservoir performance**
- Predicting Sediment Loads, 1213
- Reservoir Sedimentation. II: Reservoir Desiltation and Long-Term Storage Capacity, 491
- Reservoir sedimentation**
- Adequacy of Surface Water-Supply Systems: Case Study, 1073
- Reservoir Sedimentation. I: Delta and Density Current Deposits, 490
- Reservoir Sedimentation. II: Reservoir Desiltation and Long-Term Storage Capacity, 491
- Reservoir storage**
- Adequacy of Surface Water-Supply Systems: Case Study, 1073
- Reservoir systems**
- Optimization and Simulation of Multiple Reservoir Systems, 1040
- Reservoir Systems Analysis: Closing Gap Between Theory and Practice, 1052
- Reservoirs**
- Aggregation-Disaggregation Approach to Multireservoir Operation, 1063
- Density Currents Entering Lakes and Reservoirs, 557
- Destruction of Stratification By Bubble Plume, 501
- Efficiency of Jet Mixing of Temperature-Stratified Water, 328
- Multiobjective Analysis of Multireservoir System, 1059
- Performance Evaluation of Lake Shelbyville by Stochastic Dynamic Programming, 1047
- Predicting Sediment Loads, 1213
- Preliminary Sizing of Detention Reservoirs to Reduce Peak Discharges, 561
- Reservoir Management and Thermal Power Generation, 1061
- Reservoir Sedimentation. I: Delta and Density Current Deposits, 490
- Reservoir Sedimentation. II: Reservoir Desiltation and Long-Term Storage Capacity, 491
- Turning on the Waterworks, 1190
- Use of Density Current to Modify Thermal Structure of TVA Reservoirs, 506
- Water-Balance Model of Two Conservancies in Guyana, 606
- Water-Level Control in Hydropower Plants, 151
- Residential location**
- Price Effects of Landfills on Residential Land Values, 1034
- Residual soils**
- Strength Correlation Factor for Residual Soils, 396
- Residual strength**
- Residual Strength of Structural Components Subjected to Cyclic Loads, 903
- Steady-State Strength Analysis of Lower San Fernando Dam Slide, 387
- Residual stress**
- Out-of-Plane Strengths of Steel Beams, 868
- Study on Maximum Strength of Cold-Formed Steel Columns, 764
- Resistance**
- Modeling Shallow Overland Flow in Surface Irrigation, 586
- Resistance coefficients**
- Dimensionally Homogeneous Manning's Formula, 548
- Field-Measured Hydraulic Resistance Characteristics in Vegetation-Infested Canals, 590
- Resistance factors**
- ASCE LRFD Method for Stainless Steel Structures, 817
- Commentary on Proposed Specification for Structural Steel Beams with Web Openings (with Design Example), 947
- Inelastic Limit States Design. Part I: Planar Frame Studies, 898
- Inelastic Limit States Design. Part II: Three-Dimensional Frame Study, 899
- Proposed Specification for Structural Steel Beams with Web Openings, 946
- Transportation of Demineralized Water: Case Study, 1005
- Resource management**
- Indigenous Resource Utilization in Design of Advanced Lunar Facility, 31
- Resources**
- Engineering, Construction, and Operations in Space III, 1244
- Response spectra**
- Experimental Study of Secondary Systems in Base-Isolated Structure, 880
- Seismic Response of Pacific Park Plaza. I: Data and Preliminary Analysis, 845
- Response time**
- LGG System for Emergency Response Applications, 964
- Responsibilities**
- Engineering Pre-engineered Buildings, 1199
- Restoration**
- Creating Wetlands, 1186
- Retaining walls**
- Balanced Seismic Design of Anchored Retaining Walls, 410
- Design Method for Frozen-Soil Retaining Wall, 54
- Design of Tied-Back Walls for Seismic Loading, 464
- Dynamic Response Analysis of Reinforced-Soil Retaining Wall, 426
- Retaining Wall With Reinforced Cohesionless Backfill, 467
- Seismic Passive Resistance of Tied-Back Walls, 418
- Seismic Response of Multianchored Retaining Walls, 463
- Simple Rigid Plastic Model for Seismic Tilting of Rigid Walls, 782

Total Stress Analysis of Cantilever Sheetpiling in Layered Clay, 422

Retention

Future Resources for Engineering, 727

Strategies to Stem Declining Engineering Enrollments, 743

Women in Civil Engineering—Graduate's Perspective, 726

Retention time

Mechanism of Biological Treatment in Plug-Flow or Batch Systems, 344

Model for Biological Reactors Having Suspended and Attached Growths, 366

Retrofitting

Lessons Not Learned from 1989 Loma Prieta Earthquake, 736

Retrofitting a Landmark, 1132

Reynolds stress

Effects of Porous Bed on Turbulent Stream Flow above Bed, 540

Rice

Modeling Irrigation Schedules for Lowland Rice with Stochastic Rainfall, 573

Riffles

Modeling Low-Flow Mixing through Pools and Riffles, 553

Rigid frames

Development of Design Spectra for Actively Controlled Wall-Frame Buildings, 224

Rigid pavements

Analysis and Design of Doweled Slab-on-Grade Pavement Systems, 1016

Dynamic Analysis of Rigid Airport Pavements with Discontinuities, 989

Field Instrumentation and Performance Monitoring of Rigid Pavements, 990

Rigid-Pavement Evaluation Using NDT—Case Study, 1002

Rigid-body dynamics

In-Plane Floor Deformations in RC Structures, 930

Rocking Impedance of Embedded Strip Foundations in Layered Soil, 407

Rigidity

Axisymmetric General Shells and Jointed Shells of Revolution, 937

Buckling of Columns of Variable Flexural Rigidity, 192

Frictionless Contact with BEM Using Quadratic Programming, 266

Simple Rigid Plastic Model for Seismic Tilting of Rigid Walls, 782

Rings

Buckle Propagation in Submarine Pipelines, 288

Low-Order Interpolation Functions for Curved Beams, 174

Structural Efficiency of Internally Ring-Stiffened Steel Tubular Joints, 926

Riprap

Field Performance and Analysis of Steep Riprap, 445

Risk

Risk Consistent Estimate of Heat-Straightening Applications. I: Plates, 951

Risk Consistent Estimate of Heat-Straightening Applications. II: Beams, 952

Risk-Based Decision Making in Water Resources V, 1266

Risk acceptance

Reassessing the Risk Assessment, 1139

Risk-Based Decision Making in Water Resources V, 1266

Risk analysis

Acquisition of Expert Judgment: Examples from Risk Assessment, 148

Coastal Engineering Practice '92, 1237

Dealing with Uncertainty: From Health-Risk Assessment to Environmental Decision Making, 144

High Level Radioactive Waste Management, 1253

Information Theory in Risk Analysis, 361

Jury Verdict: Frequency versus Risk-Based Culvert Design, 1046

Probabilistic Environmental Risk of Hazardous Materials, 360

Reassessing the Risk Assessment, 1139

Reliability-Based Pier Scour Engineering, 549

Risk Analysis Approach to Selection of Contractor Evaluation Method, 139

Risk management

Nitrate Risk Management under Uncertainty, 1045

Risk Reduction Through Indemnification Contract Clauses, 662

Strategies in Risk Management of On-Demand Guarantees, 103

River basin development

Conjunctive-Use Planning in Mad River Basin, California, 1043

River basins

Conjunctive-Use Planning in Mad River Basin, California, 1043

Reuse Simulation in Irrigated River Basin, 631

River beds

Bed-Load Coefficients, 555

River flow

Innovative Reregulation Weirs, 1163

Stage-Discharge Relationship in Tidal Rivers, 1088

Rivers

Properties of Various Sediment Sampling Procedures, 523

Proposed Similarity Law for Surface Velocity in Hydraulic Models, 547

Salinity of Rivers: Transfer Function-Noise Approach, 596

Sediment and Aquatic Habitat in River Systems, 505

Stage-Discharge Relationship in Tidal Rivers, 1088

Stochastic Theory for Irregular Stream Modeling. Part I: Flow Resistance, 531

Turbulence Characteristics of Sediment-Laden Flows in Open Channels, 524

SUBJECT INDEX

Road conditions

Image-Processing Techniques Applied to Road Problems, 972

Road construction

Method for Preevaluation and Selection of Road Projects in Gabon, 978

Use of Scrap Tires in Road Construction, 123

Road curves

Exact Minimum Sight Distance on Sag Curve with Centered Overpass, 1006

Road damage

Image-Processing Techniques Applied to Road Problems, 972

Road design

Geometric Characterization of Road Humps for Speed-Control Design, 1007

Road surface roughness

Cable-Stayed Bridge Vibration Due to Road Surface Roughness, 834

Dynamic Response of Multigirder Bridges, 881

Impact Analysis of Continuous Multigirder Bridges due to Moving Vehicles, 953

Predicting Vertical Acceleration in Vehicles Through Road Roughness, 970

Roads

Estimating Earthwork Volumes of Curved Roadways: Mathematical Model, 1021

Geometric Characterization of Road Humps for Speed-Control Design, 1007

Image-Processing Techniques Applied to Road Problems, 972

Road and Airport Pavement Response Monitoring Systems, 1267

Robotics

Automation of Concrete Slab-on-Grade Construction, 134

Computer-Controlled Brick Masonry, 68

Engineering, Construction, and Operations in Space III, 1244

Object-Oriented Programming in Robotics Research for Excavation, 80

Rock masses

Norway's Olympic Cavern, 1230

Rock strength

Durability of Stone for Rubble Mound Breakwaters, 1242

Rock structures

Designing Reinforced Rock, 1125

Durability of Stone for Rubble Mound Breakwaters, 1242

Field Performance and Analysis of Steep Riprap, 445

Rockfill dam construction

Compaction Quality Control in Granular Shell of Earth Dam, 433

Rocks

Analysis of Laterally Loaded Shafts in Rock, 408

Design of Socketed Drilled Shafts in Limestone, 455

Designing Reinforced Rock, 1125

Durability of Stone for Rubble Mound Breakwaters, 1242

Rubble-mound breakwaters

Dynamics of Saturated Rocks. IV: Column and Borehole Problems, 261

Wave Runup on Smooth and Rock Slopes of Coastal Structures, 1111

Rockslides

Restricting Rockfalls, 1214

Rods

Exact Solution for General Torsion Problems Using Boundary Singularities, 284

Roller compacted concrete

Permeability of Roller Compacted Concrete, 674

RCC at 10, 1207

Roller Compacted Concrete III, 1268

Roofs

Estimating Uplift Capacity of Light Steel Roof System, 804

Howe Truss Behavior Interpreted by Deflections, 716

Roof-Snow Load for Seismic-Design Calculations, 887

Tensile Terminal, 1215

Wind Loads on Buildings with Sawtooth Roofs, 780

Rotating biological contactor

Activity of Biomass in RBC System Treating Pulp Industrial Wastewater, 351

Rotation

Particle Motion in Rotary Screen, 190

Roughness

Alluvial Canals Adequacy, 609

Dimensionally Homogeneous Manning's Formula, 548

Predicting Vertical Acceleration in Vehicles Through Road Roughness, 970

Stochastic Theory for Irregular Stream Modeling. Part I: Flow Resistance, 531

Velocity Distribution Inside and Above Branched Flexible Roughness, 636

Roughness coefficient

Darcy-Weisbach Roughness Coefficients for Gravel and Cobble Surfaces, 578

Flow Capacity through Wide and Submerged Vegetal Channels, 622

Furrow Flow Velocity Effect on Hydraulic Roughness, 643

Hydraulic Roughness Coefficients for Native Rangelands, 626

Prediction of Natural Channel Hydraulic Roughness, 615

Route preferences

Shortest Path Within Polygon and Best Path Around or through Barriers, 1029

Routes

Shortest Path Within Polygon and Best Path Around or through Barriers, 1029

Rubber

Use of Scrap Tires in Road Construction, 123

Rubble-mound breakwaters

Durability of Stone for Rubble Mound Breakwaters, 1242

Rule induction tools

Expert Systems for Civil Engineers: Knowledge Representation, 1249

Site Event Advisor: Expert System for Contract Claims, 86

Runoff

Beginning of Motion for Selected Unanchored Residue Materials, 614

Calibrating SHE Soil-Erosion Model for Different Land Covers, 621

Conceptual Basis of Seasonal Streamflow Time Series Models, 538

Darcy-Weisbach Roughness Coefficients for Gravel and Cobble Surfaces, 578

Effects of Drainage and Water-Management Practices on Hydrology, 628

Estimating Peak Flows from Small Agricultural Watersheds, 580

Hydrologic Parameter Estimation Using Geographic Information System, 1066

Improved Techniques in Regression-Based Streamflow Volume Forecasting, 1075

New Look at Regional Flood-Frequency Relations for Arid Lands, 518

Probabilistic Design of Open Drainage Channels, 633

Stepwise Disaggregation Scheme for Synthetic Hydrology, 511

Rural areas

Appropriate Technology for Flood Warnings, 1172

Ecuador's Rural Cadasters and Land Titling Project (CATIR): Technical Process, 966

Safety

Analysis of Stability of L'Ambiance Plaza Lift-Slab Towers, 721

ASCE Should Have a Construction Safety Committee, 730

Buckling of Suspended Cambered Girders, 784

Exchange Place Station Subsurface Reconstruction and Improvements, 100

Expert System for Construction Safety. I: Fault-Tree Models, 722

Expert System for Construction Safety. II: Knowledge Base, 723

L'Ambiance Plaza: What Have We Learned, 1127

Role of Designers in Construction Worker Safety, 130

Safety and Service Life of Equipment Designed for Cold Climate Operation, 56

Tolerance Limits for Geometric Imperfections in Hyperbolic Cooling Towers, 873

Urban Transit Guides Application of Advanced Train Control, 977

Safety analysis

L'Ambiance Plaza: What Have We Learned, 1127

Safety engineering

Retrofitting a Landmark, 1132

Safety factors

Reliability-Based Pier Scour Engineering, 549

Salaries

ASCE 1991 Salary Survey: Summary of Findings, 739

Salinity

Reuse Simulation in Irrigated River Basin, 631

Salinity of Rivers: Transfer Function-Noise Approach, 596

Salt water intrusion

Effects of Sea-Level Rise on Bays and Estuaries, 476

Quasi-Three-Dimensional Optimization Model of Jakarta Basin, 1037

Saltation

Bed-Load Transport on Transverse Slope. I, 499

Mechanics of Saltating Grains. II, 500

Salts effects

Moisture Migration Through Concrete Floor Slabs, 707

Sampling

Evaluation of Probabilities Using Orientated Simulation, 852

New Total Sediment-Load Sampler, 569

Optimal Importance-Sampling Density Estimator, 221

Properties of Various Sediment Sampling Procedures, 523

Sampling of Wastewater Effluent, 318

Sampling designs

Properties of Various Sediment Sampling Procedures, 523

Sand

Drainage Efficiency of Sand Layer in Layered Clay-Sand Reclamation, 378

Driving Characteristics of Open-Toe Piles in Dense Sand, 372

Effects of K_0 and Overconsolidation on Uplift Capacity, 446

Fine Ottawa Sand: Experimental Behavior and Theoretical Predictions, 469

Hyperconcentrated Sand-Water Mixture Flows over Erodeable Bed, 559

Influence of Seepage on Stability of Sandy Slope, 431

Postdensification Penetration Resistance of Clean Sands, 12

Static Instability and Liquefaction of Loose Fine Sandy Slopes, 371

Submarine Flow Slide in Puget Sound, 452

Time-Dependent Cone Penetration Resistance Due to Blasting, 429

Undrained Shear Strength of Liquefied Sands for Stability Analysis, 460

Sandbars

Hyperconcentrated Sand-Water Mixture Flows over Erodeable Bed, 559

Prediction of Storm/Normal Beach Profiles, 1090

Sandwich panels

Backfill-Stiffened Foundation Wall Design, 465

Effects of Bonding Stiffness on Thermal Stresses in Sandwich Panels, 48

Sandwich structures

High-Order Theory for Sandwich-Beam Behavior with Transversely Flexible Core, 214

Sanitary landfills

Moisture and Suction in Sanitary Landfills in Semiarid Areas, 359

Satellite communications

Technology is Here—Are You Ready?, 661

Satellite mapping

Beyond Push-Button GPS, 1175

Integrated GPS-INS for High-Accuracy Road Positioning, 965

Satellites

BEST: New Satellite Mission Dedicated to Tropical System Energy Budget, 15

Rainfall Area Identification Using GOES Satellite Data, 584

Saturation

Dynamics of Saturated Rocks. IV: Column and Borehole Problems, 261

Review of Wetting-Induced Collapse in Compacted Soil, 442

Saturation Flow and Capacity of Shared Permissive Left-Turn Lane, 1008

Swell versus Saturation for Compacted Clay, 436

Saudi Arabia

Owner Involvement in Construction Projects in Saudi Arabia, 655

Surface and Subsurface Drainage of Metropolitan City in Arid Zone, 572

Scale effect

Ice Loads on Vertical Bridge Pier at Two Different Model Scales, 55

Laboratory Study of Oil Slick Subjected to Nearshore Circulation, 362

Large-Scale Loading Tests of Shallow Footings in Pneumatic Caisson, 457

Scale models

Flexural Tensile Strength of Partially Grouted Concrete Masonry, 950

Flow and Energy Dissipation Over Stepped Gabion Weirs, 507

Model of Fate and Accumulation of PCB Homologues in Hudson Estuary, 14

Modeling and Pilot-Scale Experimental Verification for Predenitrification Process, 308

Scattering

Three-Dimensional Scattering of Solitary Waves by Vertical Cylinder, 1112

Scheduling

CONSCHE: Expert System for Scheduling of Modular Construction Projects, 119

Construction Project Planning Process Model for Small-Medium Builders, 128

Optimal Long-Term Scheduling of Bridge Deck Replacement and Rehabilitation, 987

Optimal Pump Scheduling in Water-Supply Networks, 1062

Optimal Scheduling of Consecutive Landfill Operations with Recycling, 332

Planning Simulation Model of Irrigation District, 576

Schedule "Games" People Play, and Some Suggested "Remedies", 652

Scheduling Demand-Responsive Transportation Vehicles Using Fuzzy-Set Theory, 993

Schools

Tomorrow's Schools, 1123

Scour

Assessing Time-Variant Bridge Reliability Due to Pier Scour, 519

Bridge Pier Scour with Debris Accumulation, 545

Effect of Spoilers on Scour at Submarine Pipelines, 546

Effects of Footing Location on Bridge Pier Scour, 485

Estimating Wave-Induced Bottom Velocities at Vertical Wall, 1089

Local Scour at Bridge Abutments, 504

Prediction Method for Local Scour by Warmed Cooling-Water Jets, 537

Reliability-Based Pier Scour Engineering, 549

Scour Around a Vertical Pile in Waves, 1078

Scour Protection at Bridge Piers, 542

Temporal Variation of Scour Around Circular Bridge Piers, 532

Screens

Particle Motion in Rotary Screen, 190

Sea floor

Hyperconcentrated Sand-Water Mixture Flows over Erodible Bed, 559

Influence of Seafloor on Acoustic Plane Wave, 273

Response of Cross-Anisotropic Seabed to Ocean Waves, 437

Wave-Induced Effective Stress in Seabed and Its Momentary Liquefaction, 1091

Sea level

Effects of Sea-Level Rise on Bays and Estuaries, 476

Sea walls

User-Friendly PC-Based Design Package for Gravity-Type Seawalls, 1097

Sealants

Masonry Wall and Window System Leakage Investigation for University Building, 712

Seasonal variations

Conceptual Basis of Seasonal Streamflow Time Series Models, 538

Predicting Sediment Loads, 1213

Seattle

Seattle Plays It Safe, 1187

Seattle Swings Again, 1177

Secondary systems

Experimental Study of Secondary Systems in Base-Isolated Structure, 880

Power Flow and Energy in Primary-Secondary Systems, 215

Response of Systems with Uncertain Parameters to Stochastic Excitation, 213

Secondary Stresses in Closed Orthotropic Deck Ribs at Floor Beams, 788

Sediment

Cohesionless Fine-Sediment Bed Forms in Shallow Flows, 510

Equations for Compression Index Approximation, 376

Predicting Effluent PCBs From Superfund Site Dredged Material, 346

- Properties of Various Sediment Sampling Procedures, 523
- Response of Cross-Anisotropic Seabed to Ocean Waves, 437
- Tackling Trapped Sediments, 1134
- Thermal Stratification Modeling of Lakes with Sediment Heat Flux, 493
- Velocity Distribution in Uniform Sediment-Laden Flow, 482
- Sediment concentration**
- Vertical Distribution of Suspended Sediment in Uniform Open-Channel Flow, 522
- Sediment deposits**
- Tackling Trapped Sediments, 1134
- Sediment load**
- Aggradation-Degradation Process in Alluvial Channels, 567
- New Total Sediment-Load Sampler, 569
- Predicting Sediment Loads, 1213
- Vertical Distribution of Suspended Sediment in Uniform Open-Channel Flow, 522
- Sediment transport**
- Aggradation-Degradation Process in Alluvial Channels, 567
- Alluvial Canals Adequacy, 609
- Beach-Nourishment Performance Predictions, 1113
- Bed-Load Coefficients, 555
- Conceptual Bed-Load Transport Model and Verification for Sediment Mixtures, 535
- Development of Bed Features, 5
- Fully Coupled Unsteady Mobile Boundary Flow Model (FCM), 497
- Incipient Motion during Static Armoring, 498
- New Total Sediment-Load Sampler, 569
- Note on Lag in Bedload Discharge, 520
- River Bed Degradation Due to Abrupt Outfall Lowering, 521
- Routing of Heterogeneous Sediments over Movable Bed: Model Development, 483
- Routing of Heterogeneous Sediments over Movable Bed: Model Verification, 484
- Sediment and Aquatic Habitat in River Systems, 505
- Sediment yield**
- Calibrating SHE Soil-Erosion Model for Different Land Covers, 621
- Sedimentation**
- Bridge Pier Scour with Debris Accumulation, 545
- Improvement of Flow in Final Settling Tanks, 325
- Local Scour at Bridge Abutments, 504
- Modeling Desiccating Behavior of Mine Tailings, 393
- River Bed Degradation Due to Abrupt Outfall Lowering, 521
- Routing Debris Flows with Particle Segregation, 558
- Sediment and Aquatic Habitat in River Systems, 505
- Turbulence Characteristics of Sediment-Laden Flows in Open Channels, 524
- Type II Sedimentation: Removal Efficiency from Column-Settling Tests, 334
- Sedimentation tanks**
- Density Currents and Shear-Induced Flocculation in Sedimentation Tanks, 517
- Improvement of Flow in Final Settling Tanks, 325
- Influences of Density on Circular Clarifiers with Baffles, 357
- Modeling of Rectangular Settling Tanks, 552
- Seepage**
- Ambient Temperature Effect in Concrete Dam Foundation Seepage, 368
- Analytical Solution of Steady Seepage into Double-Walled Cofferdams, 185
- Free Boundary, Fluid Flow, and Seepage Forces in Excavations, 375
- Influence of Seepage on Stability of Sandy Slope, 431
- Mathematical Model for Piping, 415
- Moisture and Suction in Sanitary Landfills in Semi-arid Areas, 359
- Reflection and Transmission of Water Wave by Porous Breakwater, 1106
- Seepage Optimization for Trapezoidal Channel, 607
- Segmented elements**
- Instrumenting the 'Y', 1217
- Optimal Linear Segmented Structures with Variable Segment Boundaries, 298
- Seismic analysis**
- Dynamics of Buildings with V-Shaped Plan, 218
- Geotechnical Investigation Strategies for Lunar Base, 29
- Measured to the Max, 1216
- Seattle Plays It Safe, 1187
- Seismic Analysis Design of Frames with Viscoelastic Connections, 894
- Seismic design**
- AASHTO Seismic Isolation Design Requirements for Highway Bridges, 772
- Balanced Seismic Design of Anchored Retaining Walls, 410
- Computed Versus Observed Seismic Response and Damage of Masonry Buildings, 858
- Cyclic Behavior of Extended End-Plate Joints, 833
- Design of Tied-Back Walls for Seismic Loading, 464
- Development of Design Spectra for Actively Controlled Wall-Frame Buildings, 224
- Ductility and Detailing Requirements of Bearing Wall Buildings, 849
- Effectiveness of Seismic Strengthening Techniques for Masonry Buildings, 863
- Hysteretic Behavior of Anchorage Slip in R/C Members, 893
- Parametric Study of Seismic Soil-Tank Interaction. I: Horizontal Excitation, 800
- Parametric Study of Seismic Soil-Tank Interaction. II: Vertical Excitation, 801
- Retrofitting a Landmark, 1132
- Roof-Snow Load for Seismic-Design Calculations, 887
- Seattle Plays It Safe, 1187
- Seismic Behavior and Shear Strength of Framed Joint Using Steel-Fiber Reinforced Concrete, 775
- Seismic Design of Viscoelastic Dampers for Structural Applications, 835
- Seismic Passive Resistance of Tied-Back Walls, 418
- Seismic Performance of Low-Rise Steel Perimeter Frames, 7

SUBJECT INDEX

Settling velocity

- Seismic Response of Multianchored Retaining Walls, 463
- Seismically Safe, Spectator-Friendly, 1131
- Structural Seismic Damper, 823
- Technology Transfer in Building Construction—Case of Seismic Design, 97
- Seismic effects**
- Seismic-Energy Dissipation in MDOF Structures, 828
- Simple Rigid Plastic Model for Seismic Tilting of Rigid Walls, 782
- Seismic hazard**
- Dynamic Interface Shear Strength Properties of Geomembranes and Geotextiles, 405
- Seismic response**
- Analysis of Behavior of Earth Dam Using Strong-Motion Earthquake Records, 381
- Computed Versus Observed Seismic Response and Damage of Masonry Buildings, 858
- Design of Tied-Back Walls for Seismic Loading, 464
- Dynamic Response of Flexibly Supported Liquid-Storage Tanks, 771
- Effect of Ambient Temperature on Viscoelastically Damped Structure, 867
- Effect of Contraction Joints on Earthquake Response of Arch Dam, 816
- Embankment Dams—James L. Sherard Contributions, 1243
- Equivalent Linearization for Seismic Responses. I: Formulation and Error Analysis, 289
- Finite Element Model for Seismic RC Coupled Walls Having Slender Coupling Beams, 921
- Influence of ADAS Element Parameters on Building Seismic Response, 864
- Lessons Not Learned from 1989 Loma Prieta Earthquake, 736
- Load Shortening in Plastic Buckling of Cylinders, 267
- Out-of-Plane Seismic Response of Reinforced Masonry Walls, 896
- Recorded Seismic Response of Pacific Park Plaza. II: System Identification, 846
- Seismic Performance of Fixed-Base and Base-Isolated Steel Frames, 208
- Seismic Performance of Low-Rise Steel Perimeter Frames, 7
- Seismic Response of Pacific Park Plaza. I: Data and Preliminary Analysis, 845
- Seismic Response of R/C Frames with Irregular Profiles, 786
- Stitch Spacing and End Fixity in Seismic-Resistant Boxed Angle Braces, 917
- Three-Dimensional Seismic Analysis of La Villita Dam, 471
- Seismic stability**
- Seismic Assessment of Tailings Dams, 1232
- Selection**
- Appropriate Use of Deep-Bed Filtration Models, 365
- Expert System for Equipment Selection for Earth-Moving Operations, 109
- FRP-Reinforced Wood as Structural Material, 694
- Method for Preevaluation and Selection of Road Projects in Gabon, 978
- Risk Analysis Approach to Selection of Contractor Evaluation Method, 139
- Selection of Design/Build Proposal Using Fuzzy-Logic System, 108
- Selenium**
- Removing Selenium(IV) and Arsenic(V) Oxyanions with Tailored Chelating Polymers, 352
- Seminars**
- Beyond Push-Button GPS, 1175
- Sensitivity analysis**
- Postbuckling Response Simulations of Laminated Anisotropic Panels, 40
- Sensitivity Analysis of Thin-Walled I-Beams Resting on Elastic Foundation, 226
- Thermomechanical Buckling of Multilayered Composite Plates, 175
- Sensors**
- Histogram-Based Approach for Automated Pavement-Crack Sensing, 1013
- Smart Structures, 1222
- Testing Photoelectric Sensor System to Classify Vehicles, 998
- Use of Short-Period Microtremors for V_s Profiling, 450
- Separation**
- Separation of Skewness: Reality or Regional Artifact?, 496
- Service life**
- Safety and Service Life of Equipment Designed for Cold Climate Operation, 56
- Service loads**
- Modeling Stiffness Degradation in Filamentary Composite Materials, 686
- Service Load Behavior of Concrete Members Prestressed with Unbonded Tendons, 900
- Serviceability**
- Bracing Requirements of Plane Frames, 844
- Limit-State Interactions in Reliability-Based Design for Wood Structures, 802
- Settlement analysis**
- Elastic-Plastic Analysis of Footings on Anisotropic Soils, 388
- Settlements of Shallow Foundations on Cohesionless Soils, 385
- Small Marshall Flume Rating Correction, 514
- Transport of Low-Level Radioactive Soil at Deep-Ocean Disposal Site, 312
- Type II Sedimentation: Removal Efficiency from Column-Settling Tests, 334
- Settlement control**
- Bored Tunneling for Singapore Metro, 112
- Inverse Analysis of Geotechnical Parameters on Improved Soft Bangkok Clay, 419
- Loss of Ground During CFA Pile Installation in Inner Urban Areas, 416
- Pipeline Response to Pile Driving and Adjacent Excavation, 383
- Settling velocity**
- Modeling of Rectangular Settling Tanks, 552

Sewage

- Improvement of Flow in Final Settling Tanks, 325
- Perils of Point Loma, 1221

Sewage sludge

- Bioleaching of Metals from Sewage Sludge by Sulfur-Oxidizing Bacteria, 348

Sewage treatment

- Perils of Point Loma, 1221

Sewage treatment plants

- Motown Tunneling, 1154

Sewer design

- Lessons Learned—Milwaukee Water Pollution Abatement Program, 656

Sewer pipes

- Turning on the Waterworks, 1190

Sewers

- Manholes and Microtunneling, 1228
- Motown Tunneling, 1154
- Multireservoir Sewer-Network Control via Multivariable Feedback, 1071
- Planning Water Supply and Sanitation Projects in Developing Countries, 1058

Shafts

- Analysis of Laterally Loaded Shafts in Rock, 408
- Manholes and Microtunneling, 1228

Shake table tests

- Dynamic Interface Shear Strength Properties of Geomembranes and Geotextiles, 405
- Experimental Study of Secondary Systems in Base-Isolated Structure, 880
- Experimental Study of Sliding Isolated Structures with Uplift Restraint, 851

Shale

- Soil Suction-Potential Model, 392

Shallow foundations

- Large-Scale Loading Tests of Shallow Footings in Pneumatic Caisson, 457
- Settlements of Shallow Foundations on Cohesionless Soils, 385

Shallow water

- Cohesionless Fine-Sediment Bed Forms in Shallow Flows, 510
- Modeling Shallow Overland Flow in Surface Irrigation, 586
- Three-Dimensional Scattering of Solitary Waves by Vertical Cylinder, 1112
- Tide and Storm Surge Predictions Using Finite Element Model, 551

Shape

- Boundary-Element Direct Reanalysis for Continuum Structures, 253
- Mechanics of Shape Optimization in Plate Buckling, 227
- Shape Optimization of Arch Dams for Static and Dynamic Loads, 925
- Transition Plate-Bending Elements for Compatible Mesh Gradation, 181
- U.S. Sludge Digesters: From Pancakes to Eggs, 1205

Shear

- Associative Plasticity for Dilatant Soils, 200
- Prying and Shear in End-Plate Connection Design, 831
- Static Response of Prestressed Girders with Openings, 783
- Transition Plate-Bending Elements for Compatible Mesh Gradation, 181

Shear deformation

- Analysis of Thick Circular Plates Undergoing Large Deflections, 25
- Family of Iterative Shear-Deformation Theories for Shallow Shells, 286
- Improved Rectangular Element for Shear Deformable Plates, 173
- Timoshenko Beam Element Resting on Two-Parameter Elastic Foundation, 171

Shear flow

- Computation of Turbulent Shear Flow Over Surface-Mounted Obstacle, 293
- Momentum and Energy Coefficients Based on Power-Law Velocity Profile, 563

Shear lag

- Prestress Influence on Shear-Lag Effect in Continuous Box-Girder Bridge, 932

Shear modulus

- Effect of Particle Contact Bond on Shear Modulus, 430
- Elastic Wood Properties from Dynamic Tests and Computer Modeling, 905
- Postdensification Penetration Resistance of Clean Sands, 12

Shear strain

- Development of Strain During Monotonic Shear of Soft Clay, 402

Shear strength

- Analysis for Soil Reinforcement with Bending Stiffness, 448
- Effective Cohesion for Compacted Clay, 397
- Engineering Behavior of Water Treatment Sludge, 358
- Field Load Test on Full-Scale Reinforced Concrete Frame, 715
- Generalized State Parameter for Partly Saturated Soils, 398
- Modeling Anisotropy of Clays at Critical State, 201
- Modeling Strength of Sandy Gravel, 413
- Seismic Behavior and Shear Strength of Framed Joint Using Steel-Fiber Reinforced Concrete, 775
- Shear Connectors in Composite Beams with Longitudinally Cracked Slabs, 869
- Slab Behavior in Composite Beams at Openings. I: Analysis, 884
- Slab Behavior in Composite Beams at Openings. II: Tests and Verification, 885
- Strain-Softening Behavior of Granular Soil in Strain-Path Testing, 377
- Stress-Strain-Strength Responses of Compressible Chicago Glacial Clays, 454

Shear stress

- Cohesionless Fine-Sediment Bed Forms in Shallow Flows, 510

Flow Field Induced by Sea Waves Over Brick-Pattern Ripples, 541
 Investigation of Zebra Mussel Adhesion Strength Using a Rotating Disk, 349
 Measurement and Prediction of Surface Shear Stress in Annular Flume, 543
 Motion of Contact-Load Particles at High Shear Stress, 568
 Shear-Stress Distribution in Symmetrically Tapered Cantilever Beam, 941
 Velocity Distribution Inside and Above Branched Flexible Roughness, 636
Shear tests
 Field Load Test on Full-Scale Reinforced Concrete Frame, 715
 In-Place Shear Testing of Tile, 691
 Pile Capacity for Axial Cyclic Loadings, 370
 Properties of PVB Interlayer Used in Laminated Glass, 677
Shear walls
 Design Considerations for Using Adhesives in Shear Walls, 956
 Finite Element Model for Seismic RC Coupled Walls Having Slender Coupling Beams, 921
 Finite Element Modeling of Concrete Expansion and Confinement, 890
 Incorporating Load Sharing in Shear Wall Design of Light-Frame Structures, 948
Shear waves
 Effects of Multiple Modes on Rayleigh Wave Dispersion Characteristics, 449
 Use of Short-Period Microtremors for V_s Profiling, 450
Sheet piles
 Numerical Study of Soil Anisotropy, 167
Sheets
 Properties of Gypsum Wallboards Containing Fly Ash, 687
Shell structures
 Analytical Solutions for Thick, Doubly Curved, Laminated Shells, 232
 Force Deformation Equations for Initially Curved Laterally Loaded Beam Columns, 229
 Integrated Physical Model for Cylindrical Shells, 878
 Stiffened Sheathings of Orthotropic Cylindrical Shells, 808
 Tolerance Limits for Geometric Imperfections in Hyperbolic Cooling Towers, 873
Shells
 Axisymmetric General Shells and Jointed Shells of Revolution, 937
 Dimensional Analysis of Buckling of Stiffened Composite Shells, 187
Ship bridge collisions
 Design of Bridge Pier Pile Foundations for Ship Impact, 877
Ship motion
 Water-Level Oscillations in Esperance Harbour, 1101
Ships
 Ship-Berth Link as Bulk Queueing System in Ports, 1108

Shoaling
 Beach-Nourishment Performance Predictions, 1113
 Laboratory Simulations of Directionally Spread Shoaling Waves, 1083
 Measured Internal Kinematics for Shoaling Waves with Theoretical Comparisons, 1098
 Shoaling and Decay of Two Wave Trains on Beach, 1110
Shore protection
 Considerations in Using Bragg Reflection for Storm Erosion Protection, 1081
 Effects of Bottom Friction on Wave Breaking Using RCPWAVE Model, 1103
Shoreline changes
 Beach-Nourishment Performance Predictions, 1113
Shores
 Shoreline Profile of Stokes-Mode Edge Waves, 1085
Shotcrete
 Preliminary Design for NATM Tunnel Support in Soil, 394
Shrinkage
 Analysis of Circular RC Columns for Short- and Long-Term Deformations, 793
 Composite Beams with Partial Interaction under Sustained Loads, 862
 Creep Effects in Composite Beams with Flexible Shear Connectors, 872
 Drying and Cracking Effects in Box-Girder Bridge Segment, 773
 Reliability Analysis of Creep and Shrinkage Effects, 886
 Strength and Shrinkage of Natural Pozzolanic Mortar in Hot Weather, 683
Sight distances
 Exact Minimum Sight Distance on Sag Curve with Centered Overpass, 1006
Signal processing
 Frequency Domain Analysis of Undamped Systems, 197
Signalized intersections
 Change Intervals and Lost Time at Single-Point Urban Interchanges, 1009
 Computerized Solution for Signalized Intersection Service Volumes, 1000
 Flow Rates at Signalized Intersections Under Cold Winter Conditions, 996
 Knowledge-Based System for Design of Signalized Intersections, 982
 Saturation Flow and Capacity of Shared Permissive Left-Turn Lane, 1008
Silica
 Fracture Toughness for Steel Fiber-Cement Paste Interfacial Zone, 688
Silicates
 Road Aggregate Choice Based on Silicate Quality and Bitumen Adhesion, 971
Silos
 Analysis of Delamination of Post-Tensioned Silos, 814
 Design Implications of Measured Pressures and Strains in Silos, 909

Integrated Physical Model for Cylindrical Shells, 878

Silts

Static Instability and Liquefaction of Loose Fine Sandy Slopes, 371

Simple shear tests

Development of Strain During Monotonic Shear of Soft Clay, 402

Simulation

Analysis and Implementation of Thin-Layer Element for Interfaces and Joints, 302

Assessing Time-Variant Bridge Reliability Due to Pier Scour, 519

Calibrating SHE Soil-Erosion Model for Different Land Covers, 621

Computation Method for Regulating Unsteady Flow in Open Channels, 619

Evaluation of Probabilities Using Orientated Simulation, 852

Feedback Mechanisms for Operational Simulation, 69

Laboratory Simulations of Directionally Spread Shoaling Waves, 1083

Limiting Design Parameters for Accelerated Pavement-Testing System, 1018

Mapping Slope Failure Potential Using Fuzzy Sets, 391

Modeling Effects of Chemical Explosives for Excavation on Moon, 18

Noise Barrier Simulated by Rigid Screen with Back Wall, 156

Optimal Importance-Sampling Density Estimator, 221

Recursive Parameter Estimation for ARMA Simulations, 304

Reliability Analysis of Creep and Shrinkage Effects, 886

Reuse Simulation in Irrigated River Basin, 631

Simulating Solute Transport Using Laboratory-Based Sorption Parameters, 347

Simulation-Based Excursion Statistics, 220

Statistical Properties of Construction Duration Data, 121

Stochastic Time-Series Representation of Wave Data, 1100

Systems Analysis Applications at Hydrologic Engineering Center, 1051

Use of Explosives on the Moon, 19

Simulation models

Actuated Traffic Signal Control at Diamond Interchange, 994

Optimization and Simulation of Multiple Reservoir Systems, 1040

Planning Operations of Bulk Loading Terminals by Simulation, 1099

Planning Simulation Model of Irrigation District, 576

Site evaluation

Geotechnical Investigation Strategies for Lunar Base, 29

Guidelines for Rehabilitation of Civil Works of Hydroelectric Plants, 1252

Reassessing the Risk Assessment, 1139

Site Impact Traffic Assessment: Problems and Solutions, 1269

Site investigation

Constructability for Drilled Shafts, 94

Resolving Contract Disputes Based on Misrepresentations, 118

Site preparation, construction

Site-Layout Modeling: How Can Artificial Intelligence Help?, 125

Site selection

Design of Municipal Wastewater Treatment Plants, 1241

Size

Mean Size Distribution of Bed Load on Goodwin Creek, 556

Water-Level Control in Hydropower Plants, 151

Size effect

Aggradation-Degradation Process in Alluvial Channels, 567

Corrosion Cracking in Relation to Bar Diameter, Cover, and Concrete Quality, 696

FEM Modeling of Fictitious Crack Propagation in Concrete, 179

Fracture Mechanics and Size Effect of Concrete in Tension, 936

Skewed structures

Buckling of Skew Plates and Corner Condition for Simply Supported Edges, 193

Skewness

Separation of Skewness: Reality or Regional Artifact?, 496

Skin

High-Order Theory for Sandwich-Beam Behavior with Transversely Flexible Core, 214

Skin friction

Design of Socketed Drilled Shafts in Limestone, 455

Slabs

Analysis and Design of Doweled Slab-on-Grade Pavement Systems, 1016

In-Plane Floor Deformations in RC Structures, 930

Modeling Slab Contribution in Frame Connections, 895

Strength of Composite Slabs, 889

Wheel Load Distribution in I-Girder Highway Bridges, 830

Slides

Submarine Flow Slide in Puget Sound, 452

Sliding

Elastoplastic Deformation for Particulates with Frictional Contacts, 254

Micromechanics Modeling for Stress-Strain Behavior of Granular Soils. I: Theory, 472

Micromechanics Modeling for Stress-Strain Behavior of Granular Soils. II: Evaluation, 473

Slip

Analysis and Design Models for Structural Concrete Bridge Deck Overlays, 8

Composite Beams with Partial Interaction under Sustained Loads, 862

Cracking Response of RC Members Subjected to Uniaxial Tension, 824

Horizontal Load Transfer in Structural Concrete Bridge Deck Overlays, 9

Hysteretic Behavior of Anchorage Slip in R/C Members, 893

Modeling Load-Slip Behavior of Nailed Joints, 700

Reinforcement Anchorage Slip under Monotonic Loading, 892

Slope stability

Biotechnical Stabilization of Highway Cut Slope, 443

Discrete Element Method for Slope Stability Analysis, 468

Engineering Behavior of Water Treatment Sludge, 358

Fill-Slope Failure and Repair, 717

Generalized Slope Stability Analysis: Interpretation, Modification, and Comparison, 451

Generalized Three-Dimensional Slope-Stability Analysis, 461

Influence of Seepage on Stability of Sandy Slope, 431

Mapping Slope Failure Potential Using Fuzzy Sets, 391

Stability Analysis in Geomechanics by Linear Programming. I: Formulation, 458

Stability Analysis in Geomechanics by Linear Programming. II: Application, 459

Stability and Performance of Slopes and Embankments II, 1270

Static Instability and Liquefaction of Loose Fine Sandy Slopes, 371

Strength Correlation Factor for Residual Soils, 396

Submarine Flow Slide in Puget Sound, 452

Undrained Shear Strength of Liquefied Sands for Stability Analysis, 460

Slope stabilization

Tying Back a Landslide, 1225

Slopes

Bed-Load Transport on Transverse Slope. I, 499

Generalized Slope Stability Analysis: Interpretation, Modification, and Comparison, 451

Generalized Three-Dimensional Slope-Stability Analysis, 461

Hyperconcentrated Sand-Water Mixture Flows over Erodible Bed, 559

Stability and Performance of Slopes and Embankments II, 1270

Velocity Profiles in Steep Open-Channel Flows, 480

Wave Runup on Smooth and Rock Slopes of Coastal Structures, 1111

Slots

Scour Protection at Bridge Piers, 542

Sludge

Conditioning and Dewatering of Anaerobically Digested BPR Sludge, 345

Engineering Behavior of Water Treatment Sludge, 358

Environmental Engineering: Saving a Threatened Resource—In Search of Solutions, 1246

From Sludge to Brokered Biosolids, 1185

Softening by Fluidized Bed Crystallizers, 338

Synchrotron Radiation Measurements of Degree of Saturation in Porous Matrix, 257

Sludge digestion

U.S. Sludge Digesters: From Pancakes to Eggs, 1205

Sludge disposal

From Sludge to Brokered Biosolids, 1185

Fundamentals and Application of Windrow Composting, 11

Loss of PCBs from Municipal-Sludge-Treated Farmland, 10

Sludge Loading Rates for Forest Land, 317

Sludge treatment

Bioleaching of Metals from Sewage Sludge by Sulfur-Oxidizing Bacteria, 348

Conditioning and Dewatering of Anaerobically Digested BPR Sludge, 345

From Sludge to Brokered Biosolids, 1185

Metallurgical Residue for Solubilization of Metals from Sewage Sludge, 355

Radiation Energy Treatment of Water, Wastewater and Sludge: A State-of-the-Art Report, 1265

Snow loads

Roof-Snow Load for Seismic-Design Calculations, 887

Social impact

Civil Engineers Shaping Society: Our Social Responsibilities, 725

Engineering a Monument, Evoking a Nightmare, 1130

Social needs

Many Engineering Issues and Challenges Met in Development of Hong Kong, 731

Social values

Civil Engineers Shaping Society: Our Social Responsibilities, 725

Providing Lead Role in Work-Force Diversity, 728

Quantification of Agency and User Values of Pavement Performance, 973

Socioeconomic data

Comprehensive Regional Socioeconomic Simulation System, 1030

Model for Air Travel Demand, 991

Socioeconomic Accounting in Construction, 738

Sociological factors

Thoughts on Management of Acquisitions, 651

Soft soils

The Caisson Solution, 1226

Development of Strain During Monotonic Shear of Soft Clay, 402

Inverse Analysis of Geotechnical Parameters on Improved Soft Bangkok Clay, 419

Stability Analysis of Reinforced Embankments on Soft Soils, 474

Yielding of Mexico City Clay and Other Natural Clays, 417

Softening

Constitutive Model for Concrete in Strain Space, 268

Dynamic Analysis of Elastoplastic Softening Discretized Structures, 297

Softening by Fluidized Bed Crystallizers, 338

TOC Removal by Coagulation and Softening, 333

Soil compaction

Dynamic Compaction Analysis, 425

Soil compressibility

Generalized State Parameter for Partly Saturated Soils, 398

Soil conditions

Generalized State Parameter for Partly Saturated Soils, 398

Soil dynamics

Cone Models for Homogeneous Soil. I, 400

Cone Models for Soil Layer on Rigid Rock. II, 401

Effect of Particle Contact Bond on Shear Modulus, 430

Identification of Soil Properties from Foundation Impedance Functions, 406

Regolith Mechanics, Dynamics, and Foundations, 30

Three-Dimensional Seismic Analysis of La Villita Dam, 471

Soil erosion

Calibrating SHE Soil-Erosion Model for Different Land Covers, 621

Soil freezing tests

Effects of Freezing on Hydraulic Conductivity of Compacted Clay, 423

Soil investigations

Geotechnical Investigation Strategies for Lunar Base, 29

Soil layers

Cone Models for Soil Layer on Rigid Rock. II, 401

Identification of Soil Properties from Foundation Impedance Functions, 406

Vadose Zone Composite Hydraulic Conductivity, 629

Soil loss

Loss of Ground During CFA Pile Installation in Inner Urban Areas, 416

Soil mechanics

Analytical Solution of Steady Seepage into Double-Walled Cofferdams, 185

Effect of Particle Contact Bond on Shear Modulus, 430

Effects of K_0 and Overconsolidation on Uplift Capacity, 446

Identification of Soil Properties from Foundation Impedance Functions, 406

Micromechanics Modeling for Stress-Strain Behavior of Granular Soils. I: Theory, 472

Micromechanics Modeling for Stress-Strain Behavior of Granular Soils. II: Evaluation, 473

Pile Capacity for Axial Cyclic Loadings, 370

Pullout Stiffness of Elastic Anchors in Slope Stabilization Systems, 412

Regolith Mechanics, Dynamics, and Foundations, 30

Seismic Passive Resistance of Tied-Back Walls, 418

Settlements of Shallow Foundations on Cohesionless Soils, 385

Simple Double-Hardening Model for Geomaterials, 411

Stresses Induced by Surficial and Deep Loading in Elastic Medium, 432

Undrained Shear Strength of Liquefied Sands for Stability Analysis, 460

Soil nailing

Analysis for Soil Reinforcement with Bending Stiffness, 448

Soil pollution

Cleaning Up Chromium, 1146

Electrokinetic Cleanups, 1211

Electroosmotic Contaminant-Removal Processes, 311

Soil porosity

High Frequency Basin Irrigation Design for Upland Crops in Rice Lands, 611

Soil properties

Diffuse Double-Layer Equations in SI Units, 475

Modeling Strength of Sandy Gravel, 413

Seasonal Soil Strength by Spectral Analysis of Surface Waves, 51

Stability and Performance of Slopes and Embankments II, 1270

Stress-Strain-Strength Responses of Compressible Chicago Glacial Clays, 454

Swimming Pools Supported by Dissimilar Bearing Strata, 713

Soil settlement

Damage of Entryway Stairs due to Settlement of Gravel Backfill, 714

Estimating Thaw-Strain Settlement of Frozen Fill, 59

Soil, shear strength

Further Contributions to Reliability-Based Pile-Settlement Analysis, 403

Soil stabilization

Biotechnical Stabilization of Highway Cut Slope, 443

Grouting, Soil Improvement and Geosynthetics, 1250

Soil structure

Structural Evaluation of Box Culverts, 945

Soil tests

Automating The Corps, 1156

Soil water

Adaptation of Horton and SCS Infiltration Equations to Complex Storms, 591

Irrigation, Drainage, and Landscaping for Expansive Soil, 592

Irrigation Timing for Wheat Based on Climate, Crop, and Soil Data, 598

Precision of Evapotranspiration Estimates Using Neutron Probe, 638

Stochastic Model for Soil Moisture Deficit in Irrigated Lands, 608

Two-Dimensional Analysis of Furrow Infiltration, 627

Soil water movement

Damage to Two Apartment Buildings Due to Moisture Variation of Expansive Soil, 718

Soil-pile interaction

Further Contributions to Reliability-Based Pile-Settlement Analysis, 403

Interactive Base-Isolation Foundation System: I. Finite Element Formulation, 277

SUBJECT INDEX

- Interactive Base-Isolation Foundation System: II. Parametric Study, 278
- Nonlinear Soil-Pile Interaction Model for Dynamic Lateral Motion, 373
- Piles Under Dynamic Loads, 1262
- Reserve Capacity Design Method (RCDM) for Deep-water Piled Foundations, 1079
- Soils**
- Associative Plasticity for Dilatant Soils, 200
- Evaluation of Plastic Bifurcation for Plane Strain versus Axisymmetry, 184
- High Frequency Basin Irrigation Design for Upland Crops in Rice Lands, 611
- Modeling Effects of Chemical Explosives for Excavation on Moon, 18
- A Monumental Task, 1171
- Movement of Nonpoint-Source Contaminants Through Heterogeneous Soils, 577
- Reinforced Sand Behavior Overlying Compressible Subgrades, 456
- Strain-Softening Behavior of Granular Soil in Strain-Path Testing, 377
- Transport of Low-Level Radioactive Soil at Deep-Ocean Disposal Site, 312
- Use of Explosives on the Moon, 19
- Soils, saturated**
- Adaptation of Horton and SCS Infiltration Equations to Complex Storms, 591
- Analysis of Recharge in Anisotropic, Layered, Saturated-Unsaturated Soil, 612
- Anisotropic Plasticity Model for Undrained Cyclic Behavior of Clays. I: Theory, 379
- Anisotropic Plasticity Model for Undrained Cyclic Behavior of Clays. II: Verification, 380
- Electroosmotic Contaminant-Removal Processes, 311
- Electroosmotic Removal of Gasoline Hydrocarbons and TCE From Clay, 310
- Generalized State Parameter for Partly Saturated Soils, 398
- Soils, unsaturated**
- Analysis of Recharge in Anisotropic, Layered, Saturated-Unsaturated Soil, 612
- Comparative Survey of Four Unsaturated Soil Flow Equations, 512
- Modeling of Soil Venting Processes to Remediate Unsaturated Soils, 314
- Soil-structure interaction**
- Analysis for Soil Reinforcement with Bending Stiffness, 448
- Dynamic Response of Flexibly Supported Liquid-Storage Tanks, 771
- Elastic Solutions for Arbitrarily Shaped Foundations, 414
- Interactive Base-Isolation Foundation System: I. Finite Element Formulation, 277
- Parametric Study of Seismic Soil-Tank Interaction. I: Horizontal Excitation, 800
- Parametric Study of Seismic Soil-Tank Interaction. II: Vertical Excitation, 801
- Preliminary Design for NATM Tunnel Support in Soil, 394
- Pullout Stiffness of Elastic Anchors in Slope Stabilization Systems, 412

Space structures

- Recorded Seismic Response of Pacific Park Plaza. II: System Identification, 846
- Seismic Response of Pacific Park Plaza. I: Data and Preliminary Analysis, 845
- Stability of Frames with Grade Beam and Soil Interaction, 161
- Solar radiation**
- Estimation of Daytime Net Radiation Over Well-Watered Grass, 604
- Solid waste management**
- Landfill-Cover Conflict, 1234
- Particle Motion in Rotary Screen, 190
- Solid wastes**
- Controlling Pulsed Incompressible Flow, 140
- Durability of MSW Fly-Ash Concrete, 699
- MSW Incinerator Ash as Aggregate in Concrete and Masonry, 698
- Particle Motion in Rotary Screen, 190
- Use of Scrap Tires in Road Construction, 123
- Solids**
- Simulating Solute Transport Using Laboratory-Based Sorption Parameters, 347
- Solitary wave**
- Three-Dimensional Scattering of Solitary Waves by Vertical Cylinder, 1112
- Solubility**
- Metallurgical Residue for Solubilization of Metals from Sewage Sludge, 355
- Solutes**
- Movement of Nonpoint-Source Contaminants Through Heterogeneous Soils, 577
- Simulating Solute Transport Using Laboratory-Based Sorption Parameters, 347
- Sorption**
- Removing Selenium(IV) and Arsenic(V) Oxyanions with Tailored Chelating Polymers, 352
- Simulating Solute Transport Using Laboratory-Based Sorption Parameters, 347
- Theory and Experiments on Subsurface Contaminant Sorption Systems, 326
- Space exploration**
- Behavior of Compacted Lunar Simulants Using New Vacuum Triaxial Device, 44
- Engineering, Construction, and Operations in Space III, 1244
- Projectile Shape and Material Effects in Hypervelocity Impact Response of Dual-Wall Structures, 43
- Technical Issues for Lunar Base Structures, 27
- Space frames**
- Elastoplastic Nonlinear Analysis of Flexibly Jointed Space Frames, 763
- Space stations**
- Issues in Developing Control Zones for International Space Operations, 42
- Projectile Shape and Material Effects in Hypervelocity Impact Response of Dual-Wall Structures, 43
- Space structures**
- Cable Structures and Lunar Environment, 36
- Concept Evaluation Methodology for Extraterrestrial Habitats, 35

- Concurrent Optimization of Large Structures. I: Algorithms, 21
- Concurrent Optimization of Large Structures. II. Applications, 22
- Construction of Pressurized, Self-Supporting Membrane Structure on Moon, 34
- Design and Construction Considerations for Lunar Outpost, 33
- Engineering Issues for Early Lunar-Based Telescopes, 38
- Geometric Modeling of Inflatable Structures for Lunar Base, 37
- Graph-Theory Approach to Eigenvalue Problem of Large Space Structures, 20
- Mechanical Equipment Requirements for Inflatable Lunar Structures, 32
- Projectile Shape and Material Effects in Hypervelocity Impact Response of Dual-Wall Structures, 43
- Spacecraft**
- Optimizing Launch-on-Time Probability, 41
- Spacecraft launching sites**
- Optimizing Launch-on-Time Probability, 41
- Spacing**
- Efficiency Formula for Pile Groups, 382
- Seismic Response of Multianchored Retaining Walls, 463
- Spatial analysis**
- Multiple Subregion Allocation Models, 1026
- SightPlan Model for Site Layout, 135
- Spatial data**
- Hydrologic Parameter Estimation Using Geographic Information System, 1066
- Integrating Facility Delivery through Spatial Information, 1025
- Specifications**
- Commentary on Proposed Specification for Structural Steel Beams with Web Openings (with Design Example), 947
- Evaluation of Impact Factors for Horizontally Curved Steel Box Bridges, 938
- Fiber: Good For the Concrete Diet?, 1157
- Improving Specifications, 1202
- Proposed Specification for Structural Steel Beams with Web Openings, 946
- Spectral analysis**
- Analysis of Behavior of Earth Dam Using Strong-Motion Earthquake Records, 381
- Risk Consistent Estimate of Heat-Straightening Applications. I: Plates, 951
- Risk Consistent Estimate of Heat-Straightening Applications. II: Beams, 952
- Seasonal Soil Strength by Spectral Analysis of Surface Waves, 51
- Speed**
- Estimating Truck's Critical Cornering Speed and Factor of Safety, 976
- Speed control**
- Geometric Characterization of Road Humps for Speed-Control Design, 1007
- Image-Processing Techniques Applied to Road Problems, 972

Spherical shells

- Classical Buckling Load of Spherical Domes Under Uniform Pressure, 243

Spillway capacity

- Evaluating Spillway Adequacy, 1166

Spillways

- Evaluating Spillway Adequacy, 1166
- Flow and Energy Dissipation Over Stepped Gabion Weirs, 507
- Fluctuating Uplift and Lining Design in Spillway Stilling Basins, 502

Splines

- New Spline Finite Element for Plate Bending, 216

Spoilers

- Effect of Spoilers on Scour at Submarine Pipelines, 546

Sprinkler irrigation

- Cost Models for Preliminary Economic Evaluation of Sprinkler Irrigation Systems, 625
- Working Conditions of Sprinkler to Optimize Application of Water, 635

Sprinklers

- Working Conditions of Sprinkler to Optimize Application of Water, 635

Stability

- Analytical Solution of Steady Seepage into Double-Walled Cofferdams, 185
- Armor Stability on Submerged Breakwaters, 1092
- Branch Switching in Bifurcation of Structures, 247
- Column Design in Steel Frames under Gravity Loads, 920
- Critical Review of Thin-Plate Stability Equations, 182
- Destabilizing Effect of Magnetic Damping in Plate Strip, 163
- Dynamic Behavior of Nonlinear Cable System. II, 207
- Dynamic Elastic-Plastic Buckling Behavior Illustrated by Simple Model, 274
- Elastic Stability of Composite Column, 295
- Engineering Mechanics, 1245
- Field Performance and Analysis of Steep Riprap, 445
- Force Deformation Equations for Initially Curved Laterally Loaded Beam Columns, 229
- Generalized Three-Dimensional Slope-Stability Analysis, 461
- Modern Approach to Design of Grassed Channels, 623
- Momentum and Energy Coefficients Based on Power-Law Velocity Profile, 563
- New Stability Equation for Columns in Braced Frames, 861
- Nonlinear Stability Analysis of Steel Members by Finite Element Method, 180
- Nonlinear Stability of Differential Surge Chambers, 560
- Optimal Design of Structures with Kinematic Nonlinear Behavior, 196
- Out-of-Plane Strengths of Steel Beams, 868
- Prebuckling Deflections and Lateral Buckling. I: Theory, 922

SUBJECT INDEX

- Prebuckling Deflections and Lateral Buckling. II: Applications, 923
- Re-examination of Ylinen and Other Column Equations, 908
- Schifflerized Angle Struts, 865
- Stability of Column Lowered Into Liquid of Higher Density, 166
- Stability of Masonry Piers and Arches, 176
- Stability Theory of Cohesive Crack Model, 189
- Stable Controllers for Instantaneous Optimal Control, 249
- Static Instability and Liquefaction of Loose Fine Sandy Slopes, 371
- Statistical Analysis of Formulas for Breakwater Armor Layer Design, 1093
- Stiffness Expressions for Element with Central and End Springs, 810
- Strength and Behavior of Slender Steel Pipe under Prestressing Force, 919
- Theoretical Study of Stability Criteria for X-Bracing Systems, 233
- Time-Delay Effect on Dynamic Response of Actively Controlled Structures, 46
- Total Stress Analysis of Cantilever Sheetpiling in Layered Clay, 422
- Water-Level Control in Hydropower Plants, 151
- Wave-Motion Stability in Canals with Automatic Controllers, 565
- Stability analysis**
- Discrete Element Method for Slope Stability Analysis, 468
- Finite Element Analysis of Thin-Walled Curved Beams Made of Composites, 871
- Flexural-Torsional Stability of Thin-Walled Columns, 299
- Fully Coupled Unsteady Mobile Boundary Flow Model (FCM), 497
- Generalized Slope Stability Analysis: Interpretation, Modification, and Comparison, 451
- Mapping Slope Failure Potential Using Fuzzy Sets, 391
- Probabilistic Stability Analysis for Deep-Water Foundation, 386
- Seismic Assessment of Tailings Dams, 1232
- Stability Analysis in Geomechanics by Linear Programming. I: Formulation, 458
- Stability Analysis in Geomechanics by Linear Programming. II: Application, 459
- Stability Analysis of Reinforced Embankments on Soft Soils, 474
- Stability of Concrete Gravity Dams with Drained and Finite Cracks, 149
- Stability of Frames with Grade Beam and Soil Interaction, 161
- Steady-State Strength Analysis of Lower San Fernando Dam Slide, 387
- Strength Correlation Factor for Residual Soils, 396
- Undrained Shear Strength of Liquefied Sands for Stability Analysis, 460
- Stabilization**
- Minipile Milestone in Memphis, 1196
- Postcrack Scaling Relations for Fiber Reinforced Cementitious Composites, 675

Statistical analysis

- Stability and Performance of Slopes and Embankments II, 1270
- Stable channels**
- Hydraulic Geometry of Threshold Channels, 503
- Stadiums**
- Seismically Safe, Spectator-Friendly, 1131
- Stainless steel**
- ASCE LRFD Method for Stainless Steel Structures, 817
- A Face-Lift for Lincoln, 1200
- Stairways**
- Damage of Entryway Stairs due to Settlement of Gravel Backfill, 714
- Standardization**
- Boston's City within a City, 1206
- CAD and the Corps, 1169
- Standards**
- ASCE LRFD Method for Stainless Steel Structures, 817
- Object-Oriented Model of Engineering Design Standards, 78
- Wind Loads on Buildings with Sawtooth Roofs, 780
- State agencies**
- Quantification of Agency and User Values of Pavement Performance, 973
- State laws**
- Pay As You Grow, 1135
- State planning**
- Elements of Effective State Land-Use Planning Policy, 1031
- State-of-the-art reviews**
- Effects of Sea-Level Rise on Bays and Estuaries, 476
- Emerging Issues in Transportation Facilities Management, 999
- Radiation Energy Treatment of Water, Wastewater and Sludge: A State-of-the-Art Report, 1265
- Water's New World, 1168
- Static loads**
- Evaluation of Flowable Fly-Ash Backfill. I: Static Loading, 389
- Hierarchical Single-Surface Model for Static and Cyclic Behavior of Interfaces, 212
- Response of Plates of Arbitrary Shape Subject to Static Loading, 260
- Static structural analysis**
- Analytical Solutions for Thick, Doubly Curved, Laminated Shells, 232
- Mutual Residual Energy Method for Parameter Estimation in Structures, 769
- Statistical analysis**
- Compaction Quality Control in Granular Shell of Earth Dam, 433
- Dealing with Uncertainty: From Health-Risk Assessment to Environmental Decision Making, 144
- Fluctuating Uplift and Lining Design in Spillway Stilling Basins, 502
- Improved Techniques in Regression-Based Streamflow Volume Forecasting, 1075
- Information Theory in Risk Analysis, 361

Statistical analysis

New Look at Regional Flood-Frequency Relations for Arid Lands, 518

Nonparametric Framework for Long-Range Streamflow Forecasting, 1041

Power Flow and Energy in Primary-Secondary Systems, 215

Probabilistic Description of Buffeting Response of Long-Span Bridges: II, 301

QSAR Parameters for Toxicity of Organic Chemicals to *Nitrobacter*, 307

Robust Testing Procedure for Detection of Multiple Blunders, 958

Statistical Analysis of Formulas for Breakwater Armor Layer Design, 1093

Statistical Analysis of Slender Composite Beam-Column Strength, 832

Variations in Measured Resilient Modulus of Asphalt Mixes, 697

Statistical data

Point-Estimate Method for Calculating Statistical Moments, 242

Statistical distributions

Engineering Analysis of Extreme Value Data: Selection of Models, 1086

Monte Carlo Technique with Correlated Random Variables, 105

Separation of Skewness: Reality or Regional Artifact?, 496

Statistical Properties of Construction Duration Data, 121

Statistical models

Engineering Analysis of Extreme Value Data: Selection of Models, 1086

Statistics

Engineering Analysis of Extreme Value Data: Selection of Models, 1086

Financial Performance Analysis for Construction Industry, 111

Impact of Flow Variability on Error in Estimation of Tributary Mass Loads, 331

Nonstationary Response of Structures with Closely Spaced Frequencies, 235

Orthometric Heights from Global Positioning System, 962

Probabilistic Mechanics and Structural and Geotechnical Reliability, 1264

Review of Ground-Water Quality Monitoring Network Design, 477

Simulation-Based Excursion Statistics, 220

Steady state

Steady-State Nonlinear Heat Transfer in Multilayered Composite Panels, 252

Steady-State Strength Analysis of Lower San Fernando Dam Slide, 387

Steel

Beam-Column Behavior of Fabricated Steel Tubular Members, 826

Commentary on Proposed Specification for Structural Steel Beams with Web Openings (with Design Example), 947

Corrosion Cracking in Relation to Bar Diameter, Cover, and Concrete Quality, 696

1992 ASCE TRANSACTIONS

Cracking Response of RC Members Subjected to Uniaxial Tension, 824

Creep Effects in Composite Beams with Flexible Shear Connectors, 872

Design of Latticed Steel Transmission Structures (ANSI/ASCE 10-90), 1240

Double Diamonds: New Brand for a Texas Bridge, 1149

Ductile Multiple-Anchor Steel-to-Concrete Connections, 850

Effect of Strain Rate on Cold-Formed Steel Stub Columns, 935

Effect of Strain Rate on Material Properties of Sheet Steels, 934

Evaluation of Impact Factors for Horizontally Curved Steel Box Bridges, 938

Experimental Performance of Long Links in Eccentrically Braced Frames, 929

High-Temperature Properties of Fire-Resistant Steel for Buildings, 778

Inelastic Limit States Design. Part I: Planar Frame Studies, 898

Inelastic Limit States Design. Part II: Three-Dimensional Frame Study, 899

Influence of ADAS Element Parameters on Building Seismic Response, 864

Laboratory Testing of Ultimate Capacity of Dented Tubular Members, 818

Nonlinear Stability Analysis of Steel Members by Finite Element Method, 180

Parametric Study of Continuous Prestressed Composite Girders, 767

Prestressed Composite Girders. I: Experimental Study for Negative Moment, 910

Prestressed Composite Girders. II: Analytical Study for Negative Moment, 911

Proposed Specification for Structural Steel Beams with Web Openings, 946

Pullout Tests Using Steel Grid Reinforcements with Low-Quality Backfill, 421

Safeguarding Steel, 1151

Schifflikerized Angle Struts, 865

Secondary Stresses in Closed Orthotropic Deck Ribs at Floor Beams, 788

Shear Connectors in Composite Beams with Longitudinally Cracked Slabs, 869

Slab Behavior in Composite Beams at Openings. I: Analysis, 884

Slab Behavior in Composite Beams at Openings. II: Tests and Verification, 885

Statistical Analysis of Slender Composite Beam-Column Strength, 832

Strength of Composite Slabs, 889

Structural Seismic Damper, 823

Turning on the Waterworks, 1190

Steel beams

Energy Dissipation in Determinate Steel Beams, 757

Energy Dissipation in Indeterminate Steel Beams, 758

Out-of-Plane Strengths of Steel Beams, 868

Risk Consistent Estimate of Heat-Straightening Applications. II: Beams, 952

Steel cables

Tying Back a Landslide, 1225

SUBJECT INDEX

Stochastic processes

Steel columns

Local and Interaction Buckling of Polygonal Section Steel Columns, 904

Microbiologically Induced Corrosion, 1161

Steel fibers

Deformational Behavior of Fiber-Reinforced Concrete Beams in Bending, 906

Flexural Analysis of Reinforced Concrete Beams Containing Steel Fibers, 914

Fracture Toughness for Steel Fiber-Cement Paste Interfacial Zone, 688

Normal- and High-Strength Fiber-Reinforced Concrete under Compression, 702

Properties of Aramid-Fiber Reinforced Concrete and SIFCON, 672

Seismic Behavior and Shear Strength of Framed Joint Using Steel-Fiber Reinforced Concrete, 775

Steel frames

Column Design in Steel Frames under Gravity Loads, 920

Damage Diagnosis of Steel Frames Using Vibrational Signature Analysis, 271

Second-Order Inelastic Analysis Methods for Steel-Frame Design, 779

Seismic Performance of Fixed-Base and Base-Isolated Steel Frames, 208

Seismic Performance of Low-Rise Steel Perimeter Frames, 7

Tomorrow's Schools, 1123

Steel piles

Offshore Challenge, 1208

Steel pipes

Strength and Behavior of Slender Steel Pipe under Prestressing Force, 919

Transportation of Demineralized Water: Case Study, 1005

Steel plates

Elastic Buckling of Incomplete Composite Plates, 154

Reinforced Concrete Beams with Plates Glued to Their Soffits, 870

Risk Consistent Estimate of Heat-Straightening Applications. I: Plates, 951

Wood Connections with Heavy Bolts and Steel Plates, 4

Steel structures

Compendium of Design Office Problems, 954

Design of Latticed Steel Transmission Structures (ANSI/ASCE 10-90), 1240

Fatigue Life of Offshore Steel Structures Under Stochastic Loading, 874

Fatigue of Welded Cruciforms Subjected to Narrow-Band Loadings, 172

Inelastic Amplification Factor for Design of Steel Beam-Columns, 859

Weldment Design for RHS Truss Connections. I: Applications, 912

Weldment Design for RHS Truss Connections. II: Experimentation, 913

Stiffeners

Stiffened Sheathings of Orthotropic Cylindrical Shells, 808

Structural Efficiency of Internally Ring-Stiffened Steel Tubular Joints, 926

Stiffening

Simultaneous Design and Control of Stiffened Laminated Composite Structures, 23

Stiffness

Approximating Lateral Stiffness of Stories in Elastic Frames, 770

Axial and Free-Bending Analysis of Spiral Strands Made Simple, 296

Cone Models for Homogeneous Soil. I, 400

Cone Models for Soil Layer on Rigid Rock. II, 401

Dynamic Stiffness Analysis of Concrete Pavement Slabs, 1003

Elastic Analysis of Submarine Pipelines, 762

Hygrothermal Effects on Mechanical Properties of Lumber, 787

Moduli and Damping Factors of Soft Marine Clays, 441

New Stability Equation for Columns in Braced Frames, 861

Prying and Shear in End-Plate Connection Design, 831

Seismic Response of Multianchored Retaining Walls, 463

Stiffness Expressions for Element with Central and End Springs, 810

Torsional Stiffness of Arbitrarily Shaped Embedded Foundations, 427

Transition Plate-Bending Elements for Compatible Mesh Gradation, 181

Wheel Load Distribution in I-Girder Highway Bridges, 830

Stiffness matrix

Event-to-Event Strategy for Nonlinear Analysis of Truss Structures. I, 806

Exact Formulation of Axisymmetric-Interface-Element Stiffness Matrix, 435

Stiffness Matrix for Nonlinear Analysis of Thin-Walled Frames, 265

Timoshenko Beam Element Resting on Two-Parameter Elastic Foundation, 171

Stilling basins

Fluctuating Uplift and Lining Design in Spillway Stilling Basins, 502

Stochastic models

Conceptual Basis of Seasonal Streamflow Time Series Models, 538

Mechanics of Saltating Grains. II, 500

Performance Evaluation of Lake Shelbyville by Stochastic Dynamic Programming, 1047

Simulation-Based Excursion Statistics, 220

Stochastic Model for Pavement Design, 1017

Stochastic Model for Soil Moisture Deficit in Irrigated Lands, 608

Void Ratio of Noncohesive Soils and Similar Materials, 438

Stochastic processes

Adaptive Parameter Estimation for Multisite Hydrologic Forecasting, 539

Conditional and Joint Failure Surface Crossing of Stochastic Processes, 262

Fatigue Life of Offshore Steel Structures Under Stochastic Loading, 874

Nonstationary Response of Structures with Closely Spaced Frequencies, 235

Probabilistic Description of Buffeting Response of Long-Span Bridges, 300

Probabilistic Description of Buffeting Response of Long-Span Bridges: II, 301

Reliability Analysis of Creep and Shrinkage Effects, 886

Reliability of Geometrically Nonlinear PR Frames, 285

Response Variability of Structures Subjected to Bifurcation Buckling, 222

Stepwise Disaggregation Scheme for Synthetic Hydrology, 511

Stochastic FEM Based on Local Averages of Random Vector Fields, 183

Stochastic Theory for Irregular Stream Modeling. Part I: Flow Resistance, 531

Stoichiometry

Effect of Nitrogen on Yield Using Bioenergetics Theory, 356

Stone columns

A Monumental Task, 1171

Storage

Storm-Water Detention Storage Design under Random Pollutant Loading, 1065

Storage facilities

Design Optimization of Passively Cooled Room, 141

Storage tanks

Dynamic Response of Flexibly Supported Liquid-Storage Tanks, 771

Storm drainage

Trash Rack Blockage in Supercritical Flow, 570

Storm runoff

Storm Runoff Detention for Pollutant Removal, 329

Storm surges

1-D Open-Channel Flow Simulation Using TVD-McCormack Scheme, 550

Tide and Storm Surge Predictions Using Finite Element Model, 551

Storms

Adaptation of Horton and SCS Infiltration Equations to Complex Storms, 591

Considerations in Using Bragg Reflection for Storm Erosion Protection, 1081

Stormwater

Preliminary Sizing of Detention Reservoirs to Reduce Peak Discharges, 561

Stormwater management

Hydraulic Engineering: Saving a Threatened Resource—In Search of Solutions, 1255

Preliminary Sizing of Detention Reservoirs to Reduce Peak Discharges, 561

Storm Runoff Detention for Pollutant Removal, 329

Storm-Water Detention Storage Design under Random Pollutant Loading, 1065

Strain

Compressive Behavior of Glass-Fiber-Reinforced Polymer Concrete, 679

Constitutive Behavior of Stress-Induced Anisotropic Cohesive Soil, 440

Cracking Response of RC Members Subjected to Uniaxial Tension, 824

Creep Recovery of Prepacked Aggregate Concrete, 695

Damage of Concrete in Fatigue, 287

Evaluation of Flowable Fly-Ash Backfill. I: Static Loading, 389

Evaluation of Flowable Fly-Ash Backfill. II: Dynamic Loading, 390

High-Temperature Properties of Fire-Resistant Steel for Buildings, 778

Moduli and Damping Factors of Soft Marine Clays, 441

Prevention of Stress Relaxation in Viscoelastic Structures, 860

Stress-Strain Curves for Brick Masonry in Biaxial Compression, 839

Temperature-Independent Relationships for Frozen Soils, 50

Use of Engineering Strain and Trefftz Theory in Buckling of Columns, 283

Strain energy

Fracture Toughness for Steel Fiber-Cement Paste Interfacial Zone, 688

Load-Duration Effects in Structural Lumber: Strain Energy Approach, 888

Strain gages

Prestressed-Concrete Railway-Bridge Live-Load Strains, 776

Strain hardening

Steady-State and Multiple Cracking of Short Random Fiber Composites, 291

Strain rate

Comparative Evaluation of Plasticity Theories against Tension-Torsion Test at Finite Strain, 281

Effect of Strain Rate on Cold-Formed Steel Stub Columns, 935

Effect of Strain Rate on Material Properties of Sheet Steels, 934

Rate Effects in Uniaxial Dynamic Compression of Concrete, 160

Temperature-Independent Relationships for Frozen Soils, 50

Strain softening

Compression Failure of Quasibrittle Material: Nonlocal Microplane Model, 186

Compressive Softening Model for Concrete, 245

Hierarchical Single-Surface Model for Static and Cyclic Behavior of Interfaces, 212

Micromechanics-Based Constitutive Model for Interface Shear, 231

Strain-Softening Behavior of Granular Soil in Strain-Path Testing, 377

Strategic planning

Canada's Green Plan: Unique Approach to Preserving Environment, 751

Strategies for Technology Push: Lessons from Construction Innovations, 120

SUBJECT INDEX

Stress concentration

Vertical Business Integration Strategies for Construction, 653

Stratification

Destruction of Stratification By Bubble Plume, 501

Stratified flow

Modeling Vertical Structure of Open-Channel Flows, 534

Streambed armoring

Incipient Motion during Static Armoring, 498

Streambeds

Incipient Motion during Static Armoring, 498

Routing of Heterogeneous Sediments over Movable Bed: Model Development, 483

Routing of Heterogeneous Sediments over Movable Bed: Model Verification, 484

Temporal Variation of Scour Around Circular Bridge Piers, 532

Streamflow

Conceptual Basis of Seasonal Streamflow Time Series Models, 538

Improved Techniques in Regression-Based Streamflow Volume Forecasting, 1075

Salinity of Rivers: Transfer Function-Noise Approach, 596

Stepwise Disaggregation Scheme for Synthetic Hydrology, 511

Streamflow forecasting

Adaptive Parameter Estimation for Multisite Hydrologic Forecasting, 539

Nonparametric Framework for Long-Range Streamflow Forecasting, 1041

Streams

Mean Size Distribution of Bed Load on Goodwin Creek, 556

New Look at Regional Flood-Frequency Relations for Arid Lands, 518

Properties of Various Sediment Sampling Procedures, 523

Waterfall Aeration Works, 1209

Streets

Discharge Capacity for Curb-Opening Inlets, 529

Strength

Adding Up Admixtures, 1158

Bracing Requirements of Plane Frames, 844

Compressive Behavior of Glass-Fiber-Reinforced Polymer Concrete, 679

Effect of Strain Rate on Cold-Formed Steel Stub Columns, 935

Effective Strength of 'Square-and-Diagonal' Double-Layer Grid, 760

Factors Controlling Properties and Durability of Concretionary Laterite Gravel Aggregates, 676

Fracture Mechanics and Size Effect of Concrete in Tension, 936

Fracture-Based Two-Way Debonding Model for Discontinuous Fibers in Elastic Matrix, 294

Free Boundary, Fluid Flow, and Seepage Forces in Excavations, 375

High-Temperature Properties of Fire-Resistant Steel for Buildings, 778

Hygrothermal Effects on Load-Duration Behavior of Structural Lumber, 815

Hygrothermal Effects on Mechanical Properties of Lumber, 787

Hysteretic Response of Reinforced-Concrete Infilled Frames, 876

Micromechanics Modeling for Stress-Strain Behavior of Granular Soils. I: Theory, 472

Strength and Behavior of Slender Steel Pipe under Prestressing Force, 919

Strength and Ductility of Confined Concrete, 847

Strength and Efficiency of Wood Box Columns, 796

Strength of Composite Slabs, 889

Temperature-Independent Relationships for Frozen Soils, 50

Stress

Antiplane Problems of Monoclinic Material, 259

Axisymmetric General Shells and Jointed Shells of Revolution, 937

Bending of Thin Plate with Three-Point Support, 838

Comparative Evaluation of Plasticity Theories against Tension-Torsion Test at Finite Strain, 281

Constitutive Behavior of Stress-Induced Anisotropic Cohesive Soil, 440

Elastic Buckling Coefficients for Long, Unstiffened Plates, 305

Finite Element Modeling of Concrete Expansion and Confinement, 890

Free-Bending Fatigue Life Estimation of Cables at Points of Fixity, 258

High-Order Theory for Sandwich-Beam Behavior with Transversely Flexible Core, 214

Large-Scale Loading Tests of Shallow Footings in Pneumatic Caisson, 457

Moduli and Damping Factors of Soft Marine Clays, 441

Prestressed-Concrete Railway-Bridge Live-Load Strains, 776

Prevention of Stress Relaxation in Viscoelastic Structures, 860

Probability of Crack Growth in Poisson Field of Penny Cracks, 210

Secondary Stresses in Closed Orthotropic Deck Ribs at Floor Beams, 788

Shear-Stress Distribution in Symmetrically Tapered Cantilever Beam, 941

Stresses Induced by Surficial and Deep Loading in Elastic Medium, 432

Stress-Strain Curves for Brick Masonry in Biaxial Compression, 839

Temperature-Independent Relationships for Frozen Soils, 50

Use of Engineering Strain and Trefftz Theory in Buckling of Columns, 283

Stress analysis

Novel Photoelastic Approach in Analysis of Elliptical Holes in Thick Plates, 250

Straight, Single-Tapered Composite I-Beams of Orthotropic Materials, 701

Stress concentration

Novel Photoelastic Approach in Analysis of Elliptical Holes in Thick Plates, 250

Structural Efficiency of Internally Ring-Stiffened Steel Tubular Joints, 926

Stress concentration

Torsional Stresses in Tubular Lap Joints with Tapered Adherends, 272

Stress distribution

Cracking and Debonding on Bimaterial Interface under Uniform Loading, 219

Stress history

Anisotropic Plasticity Model for Undrained Cyclic Behavior of Clays. I: Theory, 379

Anisotropic Plasticity Model for Undrained Cyclic Behavior of Clays. II: Verification, 380

Stress intensity factor

Cracking and Debonding on Bimaterial Interface under Uniform Loading, 219

Probability of Crack Growth in Poisson Field of Penny Cracks, 210

Stochastic FEM Based on Local Averages of Random Vector Fields, 183

Stress relaxation

Generalized Creep and Stress Relaxation Model for Clays, 462

Prevention of Stress Relaxation in Viscoelastic Structures, 860

Stress-strain relations

Compressive Softening Model for Concrete, 245

Constitutive Model for Concrete in Strain Space, 268

Elastoplastic Deformation for Particulates with Frictional Contacts, 254

Strength and Ductility of Confined Concrete, 847

Stress-strain relations, soils

Constitutive Behavior of Stress-Induced Anisotropic Cohesive Soil, 440

Development of Strain During Monotonic Shear of Soft Clay, 402

Fine Ottawa Sand: Experimental Behavior and Theoretical Predictions, 469

Micromechanics Modeling for Stress-Strain Behavior of Granular Soils. I: Theory, 472

Micromechanics Modeling for Stress-Strain Behavior of Granular Soils. II: Evaluation, 473

Numerical Study of Soil Anisotropy, 167

Stress-strain curves

Normal- and High-Strength Fiber-Reinforced Concrete under Compression, 702

Stress-Strain Curves for Brick Masonry in Biaxial Compression, 839

Striped bass

Model of Fate and Accumulation of PCB Homologues in Hudson Estuary, 14

Structural analysis

Boundary-Element Direct Reanalysis for Continuum Structures, 253

Concurrent Optimization of Large Structures. I: Algorithms, 21

Concurrent Optimization of Large Structures. II: Applications, 22

Distortional Buckling Solutions for Continuous Composite Beams, 761

Prestressed Composite Girders. II: Analytical Study for Negative Moment, 911

Second-Order Inelastic Analysis Methods for Steel-Frame Design, 779

1992 ASCE TRANSACTIONS

Service Load Behavior of Concrete Members Prestressed with Unbonded Tendons, 900

Simplified Building Analysis with Sequential Dead Loads—CFM, 809

Statically Determinate Trusses Programmed in Logic, 84

Structural behavior

A Case of the Shakes, 1133

Case Studies of Structures with Man-Induced Vibrations, 791

Effect of Ambient Temperature on Viscoelastically Damped Structure, 867

Measured to the Max, 1216

Predicting Behavior of Cyclically Loaded RC Structures, 790

Probabilistic Description of Buffeting Response of Long-Span Bridges, 300

Probabilistic Description of Buffeting Response of Long-Span Bridges: II, 301

Walking of Flatwork on Expansive Soils, 708

Structural control

Frequency Domain Optimal Control of Wind-Excited Buildings, 303

Time-Delay Effect on Dynamic Response of Actively Controlled Structures, 46

Vibration Control of Beams with Embedded Smart Composite Material, 49

Structural design

Analysis of Circular RC Columns for Short- and Long-Term Deformations, 793

Axisymmetric Buckling of Pressure-Loaded Spherical Caps, 811

Classical Buckling Load of Spherical Domes Under Uniform Pressure, 243

Concept Evaluation Methodology for Extraterrestrial Habitats, 35

Construction of Pressurized, Self-Supporting Membrane Structure on Moon, 34

Design Aids for Reinforced Concrete Columns, 924

Discrete Optimization of Structures Using Genetic Algorithms, 827

Distortional Buckling Solutions for Continuous Composite Beams, 761

Engineering a Monument, Evoking a Nightmare, 1130

Framework for Evaluation of Lunar Base Structural Concepts, 28

Indigenous Resource Utilization in Design of Advanced Lunar Facility, 31

Intelligent Objects for Synthesis of Structural Systems, 75

Mechanical Equipment Requirements for Inflatable Lunar Structures, 32

Minimum Weight Design of Structural Topologies, 856

Object-Oriented Approaches for Integrated Engineering Design Systems, 74

Peaches and Concrete, 1128

Plane Frame Optimum Design Environment Based on Genetic Algorithm, 931

Technical Issues for Lunar Base Structures, 27

Tensile Terminal, 1215

SUBJECT INDEX

Structural strength

Structural dynamics

- Correction Criteria of Finite Element Modeling in Structural Dynamics, 194
- Frequency Domain Analysis of Undamped Systems, 197
- Modal Synthesis Method for General Dynamic Systems, 241
- Nonstationary Response of Structures with Closely Spaced Frequencies, 235
- Recorded Seismic Response of Pacific Park Plaza. II: System Identification, 846
- Seismic-Energy Dissipation in MDOF Structures, 828
- Vibration of Pedestrian Overpass, 706

Structural elements

- Residual Strength of Structural Components Subjected to Cyclic Loads, 903

Structural engineering

- Analysis of Buildings Using Strain-Based Element with Rotational DOFs, 825
- Fixed-End Moments and Thrusts of Planar Curved Beams, 774
- Primitive-Composite Approach for Structural Data Modeling, 61

Structural failures

- Comments on L'Ambiance Plaza Lifting Collar/Shearheads, 710
- L'Ambiance Plaza: What Have We Learned, 1127
- Manufactured Wood Joists—Noncollapse Failure, 709
- Reliability Analysis of Truss Structures with Multi-state Elements. II, 807
- Research Needs Related to Forensic Engineering of Constructed Facilities, 704

Structural members

- Behavior of Partially Grout-Filled Damaged Tubular Members, 928
- Compendium of Design Office Problems, 954
- Crack Analysis of Reinforced Concrete Tension Members, 875
- Geometric Modeling of Inflatable Structures for Lunar Base, 37
- Inelastic Response of Variable Stiffness Members under Cyclic Loading, 236
- Minimum Weight Design of Structural Topologies, 856
- Moisture Content and Reliability-Based Design for Wood Members, 955
- Nonlinear Stability Analysis of Steel Members by Finite Element Method, 180
- Schifflerized Angle Struts, 865
- Service Load Behavior of Concrete Members Prestressed with Unbonded Tendons, 900
- Stitch Spacing and End Fixity in Seismic-Resistant Boxed Angle Braces, 917

Structural reliability

- Assessing Time-Variant Bridge Reliability Due to Pier Scour, 519
- Conditional and Joint Failure Surface Crossing of Stochastic Processes, 262
- Evaluation of System-Reliability Methods for Cable-Stayed Bridge Design, 820

- Load-Space Formulation for Time-Dependent Structural Reliability, 204
- Probabilistic Mechanics and Structural and Geotechnical Reliability, 1264
- Probabilistic Stability Analysis for Deep-Water Foundation, 386
- Reliability Analysis of Truss Structures with Multi-state Elements. II, 807
- Reliability of Geometrically Nonlinear PR Frames, 285
- Response Variability of Structures Subjected to Bifurcation Buckling, 222
- Systems Reliability Approach to Fatigue of Structures, 794

Structural response

- Aseismic Hybrid Control of Nonlinear and Hysteretic Structures II, 238
- Event-to-Event Strategy for Nonlinear Analysis of Truss Structures. I, 806
- Interactive Base-Isolation Foundation System: I. Finite Element Formulation, 277
- Interactive Base-Isolation Foundation System: II. Parametric Study, 278
- Modal Synthesis Method for General Dynamic Systems, 241
- Mutual Residual Energy Method for Parameter Estimation in Structures, 769
- One-Dimensional Model for Analysis of CRC Pavement Growth, 1004
- Recorded Seismic Response of Pacific Park Plaza. II: System Identification, 846
- Response Variability of Structures Subjected to Bifurcation Buckling, 222
- Temperature Dependent Bridge Movements, 819
- Wind Effects on Base-Isolated Structures, 255

Structural safety

- Design Considerations for Using Adhesives in Shear Walls, 956
- Seismic Design of Viscoelastic Dampers for Structural Applications, 835
- Smart Structures, 1222
- Taming Tornado Alley, 1176

Structural settlement

- Loss of Ground During CFA Pile Installation in Inner Urban Areas, 416
- Minipile Milestone in Memphis, 1196
- Swimming Pools Supported by Dissimilar Bearing Strata, 713

Structural stability

- Analysis of Stability of L'Ambiance Plaza Lift-Slab Towers, 721
- Comments on L'Ambiance Plaza Lifting Collar/Shearheads, 710
- Instability of Buildings Subjected to Earthquakes, 882
- Minipile Milestone in Memphis, 1196
- Optimal Design of Structures with Kinematic Nonlinear Behavior, 196

Structural strength

- Design Live Loads for Coherent Crowd Harmonic Movements, 821
- Taming Tornado Alley, 1176

Structure reinforcement

Nonlinear Cyclic Behavior of Reinforcing Bars Including Buckling, 943

Structures

Arc-Length Method for Passing Limit Points in Structural Calculation, 766

Aseismic Hybrid Control of Nonlinear and Hysteretic Structures I, 237

Combined Symbolic-Numeric Explosion Damage Assessment for Structures, 83

Control of Hysteretic System Using Velocity and Acceleration Feedbacks, 290

Critical Review of Thin-Plate Stability Equations, 182

Framework for Evaluation of Lunar Base Structural Concepts, 28

Irrigation, Drainage, and Landscaping for Expansive Soil, 592

Mutual Residual Energy Method for Parameter Estimation in Structures, 769

Stable Controllers for Instantaneous Optimal Control, 249

Structural Fire Protection, 1271

Support Structures for High-Resolution Optical Systems, 17

Thermal Stresses in Bi-Coated Structures, 269

Struts

Schiffmerized Angle Struts, 865

Stub girders

Modified Stub-Girder Floor System: Full-Scale Tests, 939

Students

Civil Engineering Education in Ecuador, 756

Strategies to Stem Declining Engineering Enrollments, 743

Studs

Slab Behavior in Composite Beams at Openings. I: Analysis, 884

Slab Behavior in Composite Beams at Openings. II: Tests and Verification, 885

Water Penetration in Laterally Loaded Brick-Wall Panels, 703

Subassemblies

Cyclic Behavior of Extended End-Plate Joints, 833

Subcritical flow

Design of Trapezoidal Expansive Transitions, 575

Evaluation of Supercritical/Subcritical Flows in High-Gradient Channel, 533

Subgrades

Rigid-Pavement Evaluation Using NDT—Case Study, 1002

Submarine pipelines

Buckle Propagation in Submarine Pipelines, 288

Effect of Spoilers on Scour at Submarine Pipelines, 546

Elastic Analysis of Submarine Pipelines, 762

Submerged flow

Sluice-Gate Discharge Equations, 574

Submerging

Armor Stability on Submerged Breakwaters, 1092

Subsidence

Offshore Challenge, 1208

Subsurface drainage

Including Uncertainty of Hydraulic Conductivity into Drainage Design, 624

Surface and Subsurface Drainage of Metropolitan City in Arid Zone, 572

Subsurface investigations

Geotechnical Investigation Strategies for Lunar Base, 29

Norway's Olympic Cavern, 1230

Resolving Contract Disputes Based on Misrepresentations, 118

Swimming Pools Supported by Dissimilar Bearing Strata, 713

Suction

Soil Suction-Potential Model, 392

Sulfates

Rebar Corrosion in $MgSO_4$ Solution, 693

Sulfur

Offshore Challenge, 1208

Sulfur dioxide

Integrated Assessment of Acid-Deposition Effects on Lake Acidification, 313

Sulfur oxides

Biobleaching of Metals from Sewage Sludge by Sulfur-Oxidizing Bacteria, 348

Supercritical flow

Evaluation of Supercritical/Subcritical Flows in High-Gradient Channel, 533

Trash Rack Blockage in Supercritical Flow, 570

Supports

Elastic Buckling of Rectangular Plates with Curved Internal Supports, 841

Excavation and Support for the Urban Infrastructure, 1248

Slip Behavior of Cable against Saddle in Suspension Bridges, 777

Support Structures for High-Resolution Optical Systems, 17

Surf zone

Estimating Extreme Values of Run-Up on Beaches, 1094

Wave-Induced Effective Stress in Seabed and Its Momentary Liquefaction, 1091

Surface drainage

Surface and Subsurface Drainage of Metropolitan City in Arid Zone, 572

Surface energy

Road Aggregate Choice Based on Silicate Quality and Bitumen Adhesion, 971

Surface irrigation

ALIVE (Advance Linear Velocity): Surface Irrigation Rate Balance Theory, 581

Bayesian Inference for Feedback Control. II: Surface Irrigation Example, 601

Feedback Control of Basin-Irrigation System, 605

Interpretation of Kostakov Infiltration Parameters for Borders, 582

Mathematical Zero-Inertia Modeling of Surface Irrigation: Advance in Furrows, 571
 Modeling Shallow Overland Flow in Surface Irrigation, 586

Surface runoff
 Hydraulic Roughness Coefficients for Native Rangelands, 626
 Optimum Center-Pivot Irrigation System Design with Tillage Effects, 593

Surface waters
 Evaluation of Ozone Disinfection Systems: Characteristic Time T , 322
 Participative Process in Tube Well Irrigation Development, 634
 Proposed Similarity Law for Surface Velocity in Hydraulic Models, 547

Surface waves
 Component Wave Interactions and Irregular Wave Kinematics, 1104
 Effects of Multiple Modes on Rayleigh Wave Dispersion Characteristics, 449
 Seasonal Soil Strength by Spectral Analysis of Surface Waves, 51
 Use of Short-Period Microtremors for V_s Profiling, 450

Surge
 Nonlinear Stability of Differential Surge Chambers, 560

Surveying
 Delineating Theory for GPS Surveying, 960
 Ecuador's Rural Cadasters and Land Titling Project (CATIR): Technical Process, 966
 GPS/Positioned Digital Video for Airborne GIS Data Acquisition, 963
 Photogrammetric Solution for Vehicle-Damage Investigation, 1022
 Robust Testing Procedure for Detection of Multiple Blunders, 958
 Using Expert Systems to Manage Professional Survey Practices, 961

Surveys
 Measurement of Deformations in Buried Pipeline, 957

Surveys, data collection
 ASCE 1991 Salary Survey: Summary of Findings, 739
 Computing in Civil Engineering: Current Trends and Future Directions, 737
 R&D Cooperation by Swedish Contractors, 89
 Socioeconomic Accounting in Construction, 738
 Unified Pavement Distress Index for Managing Flexible Pavements, 1012
 Women in Civil Engineering—Graduate's Perspective, 726

Suspended load
 New Total Sediment-Load Sampler, 569
 Prediction Method for Local Scour by Warmed Cooling-Water Jets, 537

Suspended solids
 Measuring Ozone by Indigo Method: Interference of Suspended Material, 367
 Model for Biological Reactors Having Suspended and Attached Growths, 366

Suspension
 Buckling of Suspended Cambered Girders, 784

Sweden
 R&D Cooperation by Swedish Contractors, 89

Swelling
 Review of Wetting-Induced Collapse in Compacted Soil, 442
 Swell versus Saturation for Compacted Clay, 436

Synthesis
 Intelligent Objects for Synthesis of Structural Systems, 75

Synthetic hydrology
 Stepwise Disaggregation Scheme for Synthetic Hydrology, 511

System analysis
 Limit-State Interactions in Reliability-Based Design for Wood Structures, 802
 Reservoir Systems Analysis: Closing Gap Between Theory and Practice, 1052
 Systems Analysis Applications at Hydrologic Engineering Center, 1051
 Systems Analysis in Ground-Water Planning and Management, 1049

System reliability
 Evaluation of System-Reliability Methods for Cable-Stayed Bridge Design, 820
 Reliability Analysis of Truss Structures with Multi-state Elements. II, 807
 Systems Reliability Approach to Fatigue of Structures, 794

Systems
 Power Flow and Energy in Primary-Secondary Systems, 215
 Response of Systems with Uncertain Parameters to Stochastic Excitation, 213

Systems engineering
 Intelligent Objects for Synthesis of Structural Systems, 75
 Research/Application of System Engineering to Water Resources Systems, 1057
 Systems-Engineering Methodology for Engineering Planning Applications, 734

Tailings
 Modeling Desiccating Behavior of Mine Tailings, 393
 Seismic Assessment of Tailings Dams, 1232

Tall buildings
 Analysis of Buildings Using Strain-Based Element with Rotational DOFs, 825
 Peaches and Concrete, 1128
 Wind-Induced Response of Structurally Asymmetric High-Rise Buildings, 768

Tall structures
 Development of Design Spectra for Actively Controlled Wall-Frame Buildings, 224

Tanks
 Load Shortening in Plastic Buckling of Cylinders, 267
 Parametric Study of Seismic Soil-Tank Interaction. I: Horizontal Excitation, 800
 Parametric Study of Seismic Soil-Tank Interaction. II: Vertical Excitation, 801

Tanks

Tuned Liquid Damper (TLD) for Suppressing Horizontal Motion of Structures, 275

Tanzania

Pilot Waste-Stabilization Pond in Tanzania, 323

Taper

Shear-Stress Distribution in Symmetrically Tapered Cantilever Beam, 941

Straight, Single-Tapered Composite I-Beams of Orthotropic Materials, 701

Taxation

Engineering-Econometric Model of Energy Demand, 146

Taylor series

TMDS for Vibration Control of Systems with Uncertain Properties, 944

Teaching methods

Future Concerns in Environmental Engineering Graduate Education, 752

Reflection in Problem Solving and Design, 741

Teamwork

Collective Excellence: Building Effective Teams, 1238

Implementation of TQM in Building Design and Construction, 665

Making Teamwork Work, 1137

Managing and Motivating People on a Joint Venture Project, 668

Nonmonetary Incentives: It Can Be Done, 647

Professionalism: Cornerstone of Engineering, 744

Technology

Appropriate Technology for Flood Warnings, 1172

Challenges of The Changing Profession, 724

Dallas Goes Trenchless, 1203

Education and Research in Japan's Construction Industry, 747

Emerging Issues in Transportation Facilities Management, 999

Grouting, Soil Improvement and Geosynthetics, 1250

Housing America in the Twenty-First Century, 1254

Selection of Design/Build Proposal Using Fuzzy-Logic System, 108

Strategies for Technology Push: Lessons from Construction Innovations, 120

Technology assessment

Assessing the Potential of E-Mail for Engineers: Case Study, 667

Evaluation Method for Advanced Acid Rain Compliance Technology, 142

Flavors and Mixins of Expert Systems Technology Transfer Model for AEC Industry, 116

Technology transfer

Evaluation of Advanced Construction Technology with AHP Method, 124

Flavors and Mixins of Expert Systems Technology Transfer Model for AEC Industry, 116

The Roads Ahead, 1152

Technology Transfer in Building Construction—Case of Seismic Design, 97

1992 ASCE TRANSACTIONS

Telecommunication

Assessing the Potential of E-Mail for Engineers: Case Study, 667

Trend in Local Area Network Utilization, 646

Telescopes

Engineering Issues for Early Lunar-Based Telescopes, 38

Structural Design of Lunar Radio Telescope Using Interactive CAD, 16

Support Structures for High-Resolution Optical Systems, 17

Temperature

Ambient Temperature Effect in Concrete Dam Foundation Seepage, 368

BOD Test for Tropical Countries, 324

Creep and Creep Rupture of Metallic Composites, 251

Creep Behavior Model for Structural Lumber, 883

High-Temperature Properties of Fire-Resistant Steel for Buildings, 778

Hygrothermal Effects on Load-Duration Behavior of Structural Lumber, 815

Hygrothermal Effects on Mechanical Properties of Lumber, 787

Irrigation Timing for Wheat Based on Climate, Crop, and Soil Data, 598

Temperature Dependent Bridge Movements, 819

Temperature-Independent Relationships for Frozen Soils, 50

Thermal Stratification Modeling of Lakes with Sediment Heat Flux, 493

Time-Dependent Cone Penetration Resistance Due to Blasting, 429

Temperature effects

Effect of Ambient Temperature on Viscoelastically Damped Structure, 867

Effects of Bonding Stiffness on Thermal Stresses in Sandwich Panels, 48

Effects of CCA Treatment and Drying on Tensile Strength of Lumber, 689

Effects of Sea-Level Rise on Bays and Estuaries, 476

Field Instrumentation and Performance Monitoring of Rigid Pavements, 990

One-Dimensional Model for Analysis of CRC Pavement Growth, 1004

Safety and Service Life of Equipment Designed for Cold Climate Operation, 56

Temperature Dependent Bridge Movements, 819

Winter Operability: Equipment Problems and Their Remedies, 57

Tendons

Asymptotic Analysis of TLP Tendons and Risers, 157

Bond Anchorage of Prestensioned FRP Tendon at Force Release, 915

Effect of Static Offset on TLP Modeling, 158

Prestress Influence on Shear-Lag Effect in Continuous Box-Girder Bridge, 932

Service Load Behavior of Concrete Members Prestressed with Unbonded Tendons, 900

Tennessee Valley Authority

Innovative Reregulation Weirs, 1163

Tensile strength

Effects of CCA Treatment and Drying on Tensile Strength of Lumber, 689

Tensile stress

Analysis of Delamination of Post-Tensioned Silos, 814

Effect of Contraction Joints on Earthquake Response of Arch Dam, 816

Tension

Comparative Evaluation of Plasticity Theories against Tension-Torsion Test at Finite Strain, 281

Crack Analysis of Reinforced Concrete Tension Members, 875

Free-Bending Fatigue Life Estimation of Cables at Points of Fixity, 258

Nonlinear Impulsive Motions of Low-Tension Cables, 202

Theoretical Study of Stability Criteria for X-Bracing Systems, 233

Tension leg platforms

Asymptotic Analysis of TLP Tendons and Risers, 157

Effect of Static Offset on TLP Modeling, 158

Wave Runup and Forces on Cylinders in Regular and Random Waves, 1116

Tension structures

Cable Structures and Lunar Environment, 36

Terminal facilities

Planning Operations of Bulk Loading Terminals by Simulation, 1099

Test equipment

Automating The Corps, 1156

Test procedures

Learning to Love NDT, 1121

Robust Testing Procedure for Detection of Multiple Blunders, 958

Testing

BOD Test for Tropical Countries, 324

Design of Latticed Steel Transmission Structures (ANSI/ASCE 10-90), 1240

Determination of Fracture Toughness for Wood, 853

Efficacy of Drug Testing Programs Implemented by Contractors, 137

Fiber: Good For the Concrete Diet?, 1157

Investigation of Zebra Mussel Adhesion Strength Using a Rotating Disk, 349

Limiting Design Parameters for Accelerated Pavement-Testing System, 1018

Partitioning of Elements by Refuse Processing, 350

Predicting Effluent PCBs From Superfund Site Dredged Material, 346

QSAR Parameters for Toxicity of Organic Chemicals to *Nitrobacter*, 307

Tests

Beam-Column Behavior of Fabricated Steel Tubular Members, 826

Driving Characteristics of Open-Toe Piles in Dense Sand, 372

Evaluation of Plastic Bifurcation for Plane Strain versus Axisymmetry, 184

Flexural Analysis of Reinforced Concrete Beams Containing Steel Fibers, 914

Flexural Tensile Strength of Partially Grouted Concrete Masonry, 950

Hydraulic Conductivity of Three Geosynthetic Clay Liners, 453

Moduli and Damping Factors of Soft Marine Clays, 441

Put to the Test, 1231

Slab Behavior in Composite Beams at Openings: II: Tests and Verification, 885

Static Response of Prestressed Girders with Openings, 783

Strength and Behavior of Slender Steel Pipe under Prestressing Force, 919

Tests of Cold-Formed Channels with Local and Distortional Buckling, 857

Texas

Double Diamonds: New Brand for a Texas Bridge, 1149

Instrumenting the 'Y', 1217

Thawing

Estimating Thaw-Strain Settlement of Frozen Fill, 59

Theories

ALIVE (Advance Linear Velocity): Surface Irrigation Rate Balance Theory, 581

Beyond Push-Button GPS, 1175

Family of Iterative Shear-Deformation Theories for Shallow Shells, 286

Thermal analysis

Steady-State Nonlinear Heat Transfer in Multilayered Composite Panels, 252

Thermal factors

Thermomechanical Buckling of Multilayered Composite Plates, 175

Three-Dimensional Solutions for Thermal Buckling of Multilayered Anisotropic Plates, 195

Use of Density Current to Modify Thermal Structure of TVA Reservoirs, 506

Thermal power plants

Optimization of Real-Time Hydrothermal System Operation, 1074

Reservoir Management and Thermal Power Generation, 1061

Thermal properties

Predictions of Thermal Characteristics for Mixed Porous Media, 685

Thermal stratification

Efficiency of Jet Mixing of Temperature-Stratified Water, 328

Thermal Stratification Modeling of Lakes with Sediment Heat Flux, 493

Thermal stresses

Effects of Bonding Stiffness on Thermal Stresses in Sandwich Panels, 48

Temperature Dependent Bridge Movements, 819

Thermal Stresses in Bi-Coated Structures, 269

Thermodynamics

Effect of Nitrogen on Yield Using Bioenergetics Theory, 356

Novel Combined-Cycle Low-Temperature Engine System, 153

Thermodynamic Model of Nitrification Kinetics, 341

Thickness

- Analysis and Implementation of Thin-Layer Element for Interfaces and Joints, 302
- Boundary-Continuous Fourier Solution for Clamped Mindlin Plates, 239
- Effect of Thickness Distribution on Performance of S-Cambered Profiles, 150
- Fundamental Frequency of Tapered Plates by Differential Quadrature, 225
- Mechanics of Shape Optimization in Plate Buckling, 227

Thin shell structures

- Axisymmetric Buckling of Pressure-Loaded Spherical Caps, 811
- Buckling of Pressurized Axisymmetrically Imperfect Cylinders Under Axial Loads, 168
- Load Shortening in Plastic Buckling of Cylinders, 267
- Response Variability of Structures Subjected to Bifurcation Buckling, 222

Thin wall sections

- Flexural-Torsional Stability of Thin-Walled Columns, 299
- Free Vibration Analysis of Curved Thin-Walled Girder Bridges, 918
- Sensitivity Analysis of Thin-Walled I-Beams Resting on Elastic Foundation, 226
- Short-Term Behavior of Pultruded Fiber-Reinforced Plastic Frame, 866
- Stiffness Matrix for Nonlinear Analysis of Thin-Walled Frames, 265

Thin wall structures

- Finite Element Analysis of Thin-Walled Curved Beams Made of Composites, 871
- Local and Interaction Buckling of Polygonal Section Steel Columns, 904
- Tests of Cold-Formed Channels with Local and Distortional Buckling, 857

Three-dimensional analysis

- Generalized Three-Dimensional Slope-Stability Analysis, 461
- Measurement of Deformations in Buried Pipeline, 957
- Three-Dimensional Seismic Analysis of La Villita Dam, 471
- Three-Dimensional Solutions for Thermal Buckling of Multilayered Anisotropic Plates, 195

Three-dimensional models

- Application of Three-Dimensional Lagrangian Residual Transport, 516
- Construction Applications of Relational Data Bases in Three-Dimensional GIS, 64
- Highway Design in 3-D, 1173
- The Hopscotch Algorithm for Three-Dimensional Simulation, 492
- Tuned Mass Dampers for Balcony Vibration Control, 797
- Using Component Mode Synthesis and Static Shapes for Tuning TMDs, 799

Thrust

- Fixed-End Moments and Thrusts of Planar Curved Beams, 774

Tidal currents

- Application of Three-Dimensional Lagrangian Residual Transport, 516

Tidal effects

- Stage-Discharge Relationship in Tidal Rivers, 1088

Tidal hydraulics

- Effect of Thickness Distribution on Performance of S-Cambered Profiles, 150
- Lagrangian Solution of St. Venant's Equations for Alluvial Estuary, 536
- Model for Estimating Tidal Flushing of Small Embayments, 1117
- Rapidly Varied Flow Analysis of Undular Bore, 1105
- Tidal Model Using Method of Characteristics, 1095

Tidal waters

- Application of Three-Dimensional Lagrangian Residual Transport, 516
- Stage-Discharge Relationship in Tidal Rivers, 1088
- Tide and Storm Surge Predictions Using Finite Element Model, 551

Tides

- Design Procedures for Effluent Discharge to Estuaries During Ebb Tide, 327
- Longitudinal Dispersion Coefficients in Estuary, 508
- Model for Estimating Tidal Flushing of Small Embayments, 1117
- Tidal Model Using Method of Characteristics, 1095

Tieback restraint systems

- Design of Tied-Back Walls for Seismic Loading, 464
- Tying Back a Landslide, 1225

Ties

- Analytical Moment-Curvature Relations for Tied Concrete Columns, 785
- Computer Graphics in Detailing Strut-Tie Models, 72

Timber construction

- Design Charts for Timber Beam-Columns, 789
- Design of Notched Wood Beams, 891
- Howe Truss Behavior Interpreted by Deflections, 716
- Hygrothermal Effects on Load-Duration Behavior of Structural Lumber, 815
- Strength and Efficiency of Wood Box Columns, 796
- Strength of Lag-Screw Connections, 916

Timbers

- Creep Behavior Model for Structural Lumber, 883
- Effects of CCA Treatment and Drying on Tensile Strength of Lumber, 689
- Load-Duration Effects in Structural Lumber: Strain Energy Approach, 888

Time dependence

- Composite Beams with Partial Interaction under Sustained Loads, 862
- Computation of Turbulent Shear Flow Over Surface-Mounted Obstacle, 293
- Creep Effects in Composite Beams with Flexible Shear Connectors, 872
- Efficiency Formula for Pile Groups, 382
- Generalized Creep and Stress Relaxation Model for Clays, 462

Load-Space Formulation for Time-Dependent Structural Reliability, 204

Reliability Analysis of Creep and Shrinkage Effects, 886

Time Domain Analysis of Dynamically Loaded Single Piles, 162

Time factors

Aspects of Road-Accident Death Analyses, 986

Change Intervals and Lost Time at Single-Point Urban Interchanges, 1009

Modeling Monsoon-Affected Rainfall of Pakistan by Point Processes, 1076

Statistical Properties of Construction Duration Data, 121

Time series analysis

Adaptive Parameter Estimation for Multisite Hydrologic Forecasting, 539

Salinity of Rivers: Transfer Function-Noise Approach, 596

Stepwise Disaggregation Scheme for Synthetic Hydrology, 511

Stochastic Time-Series Representation of Wave Data, 1100

Tires

Effect of Tire Parameters on Pavement Damage and Load-Equivalency Factors, 1019

Tolls

Testing Photoelectric Sensor System to Classify Vehicles, 998

Topsoil

Fill-Slope Failure and Repair, 717

Tornadoes

Taming Tornado Alley, 1176

Torsion

Comparative Evaluation of Plasticity Theories against Tension-Torsion Test at Finite Strain, 281

Exact Solution for General Torsion Problems Using Boundary Singularities, 284

Flexural-Torsional Stability of Thin-Walled Columns, 299

Out-of-Plane Strengths of Steel Beams, 868

Sensitivity Analysis of Thin-Walled I-Beams Resting on Elastic Foundation, 226

Torsional Radiation Damping of Arbitrarily Shaped Embedded Foundations, 428

Torsional Stiffness of Arbitrarily Shaped Embedded Foundations, 427

Torsional Stresses in Tubular Lap Joints with Tapered Adherends, 272

Torsional vibration

Torsional Radiation Damping of Arbitrarily Shaped Embedded Foundations, 428

Tort laws

Steering Clear of Tort Claims, 1179

Toughness

Compressive Behavior of Glass-Fiber-Reinforced Polymer Concrete, 679

Fracture Analysis of Mortar-Aggregate Interfaces in Concrete, 276

Normal- and High-Strength Fiber-Reinforced Concrete under Compression, 702

Towers

The Crown and the Curtain Wall, 1194

Double Diamonds: New Brand for a Texas Bridge, 1149

Schifflied Angle Struts, 865

Toxic wastes

Modeling of Toxic Wastewater Treatment by Expanded-Bed Anaerobic GAC Reactors, 337

QSAR Parameters for Toxicity of Organic Chemicals to *Nitrobacter*, 307

VOCs: The New Effluent, 1138

Traffic

Computerized Solution for Signalized Intersection Service Volumes, 1000

Traffic accident analysis

Procedures for Estimating Accident Reductions on Two-Lane Highways, 975

Traffic accidents

Identification of Inappropriate Driving Behaviors, 985

Procedures for Estimating Accident Reductions on Two-Lane Highways, 975

Traffic analysis

Site Impact Traffic Assessment: Problems and Solutions, 1269

Traffic capacity

Computerized Solution for Signalized Intersection Service Volumes, 1000

Flow Rates at Signalized Intersections Under Cold Winter Conditions, 996

Saturation Flow and Capacity of Shared Permissive Left-Turn Lane, 1008

Site Impact Traffic Assessment: Problems and Solutions, 1269

Traffic characteristics

Vehicle Classification Using Infrared Image Analysis, 981

Traffic congestion

HOV Lessons, 1204

Reexamination of Directional Distribution of Highway Traffic, 988

Traffic control

Advanced Software Design and Standards for Traffic Signal Control, 995

Knowledge-Based System for Design of Signalized Intersections, 982

Traffic control devices

Advanced Software Design and Standards for Traffic Signal Control, 995

Geometric Characterization of Road Humps for Speed-Control Design, 1007

Traffic delay

Computerized Solution for Signalized Intersection Service Volumes, 1000

Traffic engineering

Actuated Traffic Signal Control at Diamond Interchange, 994

Traffic flow

Advanced Technology Applications in Chicago-Area Freeway Traffic Management Program, 997

Traffic flow

- Designing Articulated Vehicles for Low-Speed Maneuverability, 1014
- Planning for Movement of Very Large, Slow-Moving Vehicles, 992
- Saturation Flow and Capacity of Shared Permissive Left-Turn Lane, 1008

Traffic management

- Advanced Software Design and Standards for Traffic Signal Control, 995
- Advanced Technology Applications in Chicago-Area Freeway Traffic Management Program, 997
- Designing Articulated Vehicles for Low-Speed Maneuverability, 1014
- HOV Lessons, 1204
- Issues in Developing Control Zones for International Space Operations, 42
- Knowledge-Based System for Design of Signalized Intersections, 982
- Reexamination of Directional Distribution of Highway Traffic, 988
- Transportation for Hong Kong Requires Solutions to Issues and Problems, 748

Traffic models

- Planning for Movement of Very Large, Slow-Moving Vehicles, 992

Traffic planning

- Actuated Traffic Signal Control at Diamond Interchange, 994
- Site Impact Traffic Assessment: Problems and Solutions, 1269

Traffic safety

- Identification of Inappropriate Driving Behaviors, 985
- Procedures for Estimating Accident Reductions on Two-Lane Highways, 975

Traffic signal controllers

- Actuated Traffic Signal Control at Diamond Interchange, 994
- Distributed Approach to Optimized Control of Street Traffic Signals, 974
- Traffic Signal Using Mixed Controller Operations, 1023

Traffic signals

- Distributed Approach to Optimized Control of Street Traffic Signals, 974
- Knowledge-Based System for Design of Signalized Intersections, 982
- Traffic Signal Using Mixed Controller Operations, 1023

Traffic streams

- Reexamination of Directional Distribution of Highway Traffic, 988

Traffic volume

- Planning for Movement of Very Large, Slow-Moving Vehicles, 992

Training

- Conflict Management Training for Today's Engineering Managers, 664
- Portrait of a Manager, 1191

Transfer functions

- Frequency Domain Analysis of Undamped Systems, 197

1992 ASCE TRANSACTIONS

- Introduction to Ownership and Transition. I: Ownership Transfer Considerations, 669
- Introduction to Ownership and Transition. II: Succession and Firm Valuation, 670
- Study of Open-Channel Dynamics as Controlled Process, 479

Transient flow

- Efficient Calculation of Transient Flow in Simple Pipe Networks, 527

Transient response

- Nonstationary Response of Structures with Closely Spaced Frequencies, 235

Transients

- State-Space Analysis and Control of Slow Transients in Pipes, 544
- Transients in Canal Network, 620

Transition points

- Design of Trapezoidal Expansive Transitions, 575

Transmission lines

- Coupled Vertical and Horizontal Galloping, 159

Transmission towers

- Design of Latticed Steel Transmission Structures (ANSI/ASCE 10-90), 1240

Transport phenomena

- Application of Three-Dimensional Lagrangian Residual Transport, 516
- Estuarine and Coastal Modeling, 1247
- High Level Radioactive Waste Management, 1253
- Migration of Chloroform in Aquifers, 315
- Movement of Nonpoint-Source Contaminants Through Heterogeneous Soils, 577
- Simulating Solute Transport Using Laboratory-Based Sorption Parameters, 347
- Transport of Low-Level Radioactive Soil at Deep-Ocean Disposal Site, 312

Transportation

- High Level Radioactive Waste Management, 1253
- Method for Preevaluation and Selection of Road Projects in Gabon, 978
- A New Era In Transportation, 1148
- Noise Barrier Simulated by Rigid Screen with Back Wall, 156
- Photogrammetric Solution for Vehicle-Damage Investigation, 1022

Transportation planning

- Expert Systems: Ready to Hit the Road?, 1174
- HOV Lessons, 1204
- Scheduling Demand-Responsive Transportation Vehicles Using Fuzzy-Set Theory, 993
- Site Impact Traffic Assessment: Problems and Solutions, 1269
- Transportation Planning and Air Quality, 1273

Transportation studies

- Emerging Issues in Transportation Facilities Management, 999

Transportation systems

- LGG System for Emergency Response Applications, 964
- Lifeline Earthquake Engineering in the Central and Eastern U.S., 1259

SUBJECT INDEX

Tunnel linings

Transportation for Hong Kong Requires Solutions to Issues and Problems, 748

Transverse shear

Transverse Shear Effect on Flutter of Composite Panels, 47

Trashracks

Trash Rack Blockage in Supercritical Flow, 570

Travel demand

HOV Lessons, 1204

Model for Air Travel Demand, 991

Travel modes

Transportation for Hong Kong Requires Solutions to Issues and Problems, 748

Trenching

Dallas Goes Trenchless, 1203

Trends

Future Trends and Needs in Hydraulics, 564

Triangulation

Mesh Generation for Estuarine Flow Modeling, 1115

Triaxial compression

Stress-Strain-Strength Responses of Compressible Chicago Glacial Clays, 454

Triaxial tests

Behavior of Compacted Lunar Simulants Using New Vacuum Triaxial Device, 44

Membrane Compliance and Liquefaction of Sluiced Gravel Specimens, 409

Modeling Strength of Sandy Gravel, 413

Strain-Softening Behavior of Granular Soil in Strain-Path Testing, 377

Tributaries

Impact of Flow Variability on Error in Estimation of Tributary Mass Loads, 331

Trihalomethanes

Simulating THM Formation Potential in Sacramento Delta: Part I, 1067

Simulating THM Formation Potential in the Sacramento Delta: Part II, 1068

Trip frequencies

Scheduling Demand-Responsive Transportation Vehicles Using Fuzzy-Set Theory, 993

Tropical regions

BEST: New Satellite Mission Dedicated to Tropical System Energy Budget, 15

BOD Test for Tropical Countries, 324

Design Optimization of Passively Cooled Room, 141

Trucks

Designing Articulated Vehicles for Low-Speed Maneuverability, 1014

Effect of Tire Parameters on Pavement Damage and Load-Equivalency Factors, 1019

Estimating Truck's Critical Cornering Speed and Factor of Safety, 976

Future Impact of Trucking Reform on Railway Revenue, 1015

Statistical Evaluation of Truck Overloads, 1010

Trusses

Concurrent Optimization of Large Structures. I: Algorithms, 21

Concurrent Optimization of Large Structures. II: Applications, 22

Event-to-Event Strategy for Nonlinear Analysis of Truss Structures. I, 806

Howe Truss Behavior Interpreted by Deflections, 716

The OCEA Awards of Merit, 1178

Reliability Analysis of Truss Structures with Multi-state Elements. II, 807

Statically Indeterminate Trusses Programmed in Logic, 84

Weldment Design for RHS Truss Connections. I: Applications, 912

Weldment Design for RHS Truss Connections. II: Experimentation, 913

Tube joints

Analysis of Welded Tubular Connections Using Continuum Damage Mechanics, 803

Structural Efficiency of Internally Ring-Stiffened Steel Tubular Joints, 926

Torsional Stresses in Tubular Lap Joints with Tapered Adherends, 272

Tubes

Beam-Column Behavior of Fabricated Steel Tubular Members, 826

Behavior of Partially Grout-Filled Damaged Tubular Members, 928

Comparative Evaluation of Plasticity Theories against Tension-Torsion Test at Finite Strain, 281

Constant Hole-Spacing Trail Tubes, 583

The Heartbeat of the Artery, 1120

Laboratory Testing of Ultimate Capacity of Dented Tubular Members, 818

Strength and Behavior of Slender Steel Pipe under Prestressing Force, 919

Tuned liquid dampers

Tuned Liquid Damper (TLD) for Suppressing Horizontal Motion of Structures, 275

Tuned mass dampers

A Case of the Shakes, 1133

Control of Along-Wind Response of Structures by Mass and Liquid Dampers, 155

Frequency Domain Optimal Control of Wind-Excited Buildings, 303

TMDs for Vibration Control of Systems with Uncertain Properties, 944

Tuned Mass Dampers for Balcony Vibration Control, 797

Tuned Mass Dampers to Control Floor Vibration from Humans, 798

Using Component Mode Synthesis and Static Shapes for Tuning TMDs, 799

Tunnel construction

Bored Tunneling for Singapore Metro, 112

Designing Reinforced Rock, 1125

The Heartbeat of the Artery, 1120

Motown Tunneling, 1154

Preliminary Design for NATM Tunnel Support in Soil, 394

Tunnel linings

Preliminary Design for NATM Tunnel Support in Soil, 394

Tunneling

- Bored Tunneling for Singapore Metro, 112
- Designing Reinforced Rock, 1125
- Mining for Building Expansion, 1227
- Motown Tunneling, 1154

Tunnels

- A Face-Lift for Lincoln, 1200
- The Great Chicago Flood of 1992, 1218
- Preliminary Design for NATM Tunnel Support in Soil, 394
- Tunnel Takes Cathodic Protection, 1220

Turbines

- Hydroturbine Cavitation Erosion, 152
- Novel Combined-Cycle Low-Temperature Engine System, 153

Turbulence

- Analytical Aerodynamic Investigation of Cable-Stayed Helgeland Bridge, 765
- Engineering Mechanics, 1245
- Influences of Density on Circular Clarifiers with Baffles, 357
- Mixing, Dispersion, and Resuspension in Vicinity of Ocean Wastewater Plume, 478
- Modeling Vertical Structure of Open-Channel Flows, 534
- Prediction Method for Local Scour by Warmed Cooling-Water Jets, 537
- Turbulence Characteristics of Sediment-Laden Flows in Open Channels, 524
- Velocity Profiles in Steep Open-Channel Flows, 480

Turbulent diffusion

- Hydraulic Geometry of Threshold Channels, 503

Turbulent flow

- Computation of Turbulent Shear Flow Over Surface-Mounted Obstacle, 293
- Density Currents and Shear-Induced Flocculation in Sedimentation Tanks, 517
- Effects of Porous Bed on Turbulent Stream Flow above Bed, 540
- Momentum and Energy Coefficients Based on Power-Law Velocity Profile, 563

Turf grasses

- Frictional Resistance of Overland Flow on Tropical Turfed Slope, 481

Two phase flow

- Numerical and Physical Modeling of Air Diffuser Plume, 321

Two-dimensional

- Computation of Turbulent Shear Flow Over Surface-Mounted Obstacle, 293
- Explicit Equations of Motion of Discrete System of Disks in Two Dimensions, 264

Two-dimensional models

- Two-Dimensional Analysis of Furrow Infiltration, 627

Ultimate loads

- Field Load Test on Full-Scale Reinforced Concrete Frame, 715
- Modified Stub-Girder Floor System: Full-Scale Tests, 939

- Ultimate Load Test of Slab-on-Girder Bridge, 848
- Ultimate Loads of Continuous Composite Bridges, 902

Ultimate strength

- Behavior of Partially Grout-Filled Damaged Tubular Members, 928
- Design Aids for Reinforced Concrete Columns, 924
- Effect of Strain Rate on Material Properties of Sheet Steels, 934
- Laboratory Testing of Ultimate Capacity of Dented Tubular Members, 818
- Statistical Analysis of Slender Composite Beam-Column Strength, 832
- Strength of Concrete-Filled Thin-Walled Steel Box Columns: Experiment, 927
- Structural Efficiency of Internally Ring-Stiffened Steel Tubular Joints, 926

Uncertainty analysis

- Further Contributions to Reliability-Based Pile-Settlement Analysis, 403
- Improved First-Order Uncertainty Method for Water-Quality Modeling, 354
- Integrated Assessment of Acid-Deposition Effects on Lake Acidification, 313
- Model Uncertainty Representation in Geotechnical Reliability Analyses, 384
- Nitrate Risk Management under Uncertainty, 1045
- Optimal Irrigation Delivery System Design under Uncertainty, 602
- Probability Distribution for Benefit/Cost Ratio and Net Benefit, 1044
- Response of Systems with Uncertain Parameters to Stochastic Excitation, 213
- Uncertainty and Reliability Analysis of Jacket Platform, 907

Uncertainty principles

- Comparison of Optimization Formulations for Waste-Load Allocations, 343
- Dealing with Uncertainty: From Health-Risk Assessment to Environmental Decision Making, 144
- Selection of Design/Build Proposal Using Fuzzy-Logic System, 108

Underground construction

- Underground Research: Here and There, 1229
- Wastewater under Home Plate, 1212

Underground structures

- Wastewater under Home Plate, 1212

Underwater construction

- Fly-Ash Slurry Island: I. Theoretical and Experimental Investigations, 681
- Fly-Ash Slurry Island: II. Construction in Hakucho Ohashi Project, 682
- Submarine Flow Slide in Puget Sound, 452

Underwriting

- Underwriting Process for Construction Contract Bonds, 649

Uniaxial tensile strength

- Cracking Response of RC Members Subjected to Uniaxial Tension, 824

Uniformity

Calculating Flow in Manifold and Orifice System, 342

Unionization

Substitutes for Leadership and Unionized Construction Carpenters, 110

United States

Underground Research: Here and There, 1229

Universities

Civil Engineering Education in Ecuador, 756

Unsaturated flow

Comparative Survey of Four Unsaturated Soil Flow Equations, 512

Unsteady flow

Computation Method for Regulating Unsteady Flow in Open Channels, 619

EQSWP: Extended Unsteady-Flow Double-Sweep Equation Solver, 509

Fully Coupled Unsteady Mobile Boundary Flow Model (FCM), 497

Identification of Control System for Canal with Night Storage, 597

Temporal Variation of Scour Around Circular Bridge Piers, 532

Uplift

Effects of K_0 and Overconsolidation on Uplift Capacity, 446

Estimating Uplift Capacity of Light Steel Roof System, 804

Experimental Study of Sliding Isolated Structures with Uplift Restraint, 851

Fluctuating Uplift and Lining Design in Spillway Stilling Basins, 502

Stability of Concrete Gravity Dams with Drained and Finite Cracks, 149

Uplift pressure

Ambient Temperature Effect in Concrete Dam Foundation Seepage, 368

Urban areas

Calibration Strategy for Urban Catchment Parameters, 562

Commercial Uses of Land Around Urban Railway Stations in Greece, 1033

Excavation and Support for the Urban Infrastructure, 1248

In Too Deep, 1233

Motown Tunneling, 1154

Rehabilitation of Infrastructure in Infill Sites, 753

Urban development

Accessibility of Public Services in Irbid, Jordan, 1024

Commercial Uses of Land Around Urban Railway Stations in Greece, 1033

Hong Kong Port Facilities, Airport, and Housing Require New Concepts, 755

Many Engineering Issues and Challenges Met in Development of Hong Kong, 731

Piles Over Problems Sites, 1155

Positive Influence of Impact-Fee Policy in Urban Planning and Development, 1028

Transportation for Hong Kong Requires Solutions to Issues and Problems, 748

Urban planning

Estimating Functional Population for Facility Planning, 1027

Integrating Facility Delivery through Spatial Information, 1025

Positive Influence of Impact-Fee Policy in Urban Planning and Development, 1028

Shortest Path Within Polygon and Best Path Around or through Barriers, 1029

Urban roads

Change Intervals and Lost Time at Single-Point Urban Interchanges, 1009

Discharge Capacity for Curb-Opening Inlets, 529

Urban transportation

Advanced Technology Applications in Chicago-Area Freeway Traffic Management Program, 997

Change Intervals and Lost Time at Single-Point Urban Interchanges, 1009

U.S. Army Corps of Engineers

CAD and the Corps, 1169

The Great Chicago Flood of 1992, 1218

User fees

Positive Influence of Impact-Fee Policy in Urban Planning and Development, 1028

Utilities

Novel Combined-Cycle Low-Temperature Engine System, 153

Small Utility GIS, 1223

Vadose zone

Comparative Survey of Four Unsaturated Soil Flow Equations, 512

Vadose Zone Composite Hydraulic Conductivity, 629

Value engineering

Benefit-Cost Ratios: Failures and Alternatives, 1042

Peaches and Concrete, 1128

Value Engineering at a Superfund Site, 1143

Valves

Controlling Pulsed Incompressible Flow, 140

State-Space Analysis and Control of Slow Transients in Pipes, 544

Vapor pressure

Estimation of Daytime Net Radiation Over Well-Watered Grass, 604

Variability

Fatigue Life of Offshore Steel Structures Under Stochastic Loading, 874

Fundamental Frequency of Tapered Plates by Differential Quadrature, 225

Mechanics of Shape Optimization in Plate Buckling, 227

Variations in Measured Resilient Modulus of Asphalt Mixes, 697

Variance analysis

Multivariable Analysis Using Isoparametric Finite Elements, 256

Vegetation

Biotechnical Stabilization of Highway Cut Slope, 443

Equation for Evaporation Pan to Evapotranspiration Conversions, 642

Vegetation

Field-Measured Hydraulic Resistance Characteristics in Vegetation-Infested Canals, 590

Flow Capacity through Wide and Submerged Vegetal Channels, 622

Modern Approach to Design of Grassed Channels, 623

Predicting Influence of Bank Vegetation on Channel Capacity, 530

Vehicles

Designing Articulated Vehicles for Low-Speed Maneuverability, 1014

Planning for Movement of Very Large, Slow-Moving Vehicles, 992

Testing Photoelectric Sensor System to Classify Vehicles, 998

Transportation Planning and Air Quality, 1273

Vehicle Classification Using Infrared Image Analysis, 981

Vehicular traffic

Cable-Stayed Bridge Vibration Due to Road Surface Roughness, 834

Dynamic Response of Multigirder Bridges, 881

Velocity

Effects of Porous Bed on Turbulent Stream Flow above Bed, 540

Estimating Wave-Induced Bottom Velocities at Vertical Wall, 1089

Multivariable Analysis Using Isoparametric Finite Elements, 256

Proposed Similarity Law for Surface Velocity in Hydraulic Models, 547

Velocity distribution

Momentum and Energy Coefficients Based on Power-Law Velocity Profile, 563

Proposed Similarity Law for Surface Velocity in Hydraulic Models, 547

Variation of Velocity Distribution along Nonuniform Open-Channel Flow, 525

Velocity Distribution in Uniform Sediment-Laden Flow, 482

Velocity gradient

Velocity Gradient in Filter Backwashing, 353

Velocity profile

Modeling Vertical Structure of Open-Channel Flows, 534

Velocity Distribution Inside and Above Branched Flexible Roughness, 636

Velocity Profiles in Steep Open-Channel Flows, 480

Vertical cylinders

Three-Dimensional Scattering of Solitary Waves by Vertical Cylinder, 1112

Vertical drains

Inverse Analysis of Geotechnical Parameters on Improved Soft Bangkok Clay, 419

Vertical loads

Column Design in Steel Frames under Gravity Loads, 920

Vibration

Analysis of Behavior of Earth Dam Using Strong-Motion Earthquake Records, 381

1992 ASCE TRANSACTIONS

Analytical Aerodynamic Investigation of Cable-Stayed Helgeland Bridge, 765

A Case of the Shakes, 1133

Case Studies of Structures with Man-Induced Vibrations, 791

Damage Diagnosis of Steel Frames Using Vibrational Signature Analysis, 271

Design Live Loads for Coherent Crowd Harmonic Movements, 821

Design/Control Optimization of Cross-Ply Laminates under Buckling and Vibration, 24

Destabilizing Effect of Magnetic Damping in Plate Strip, 163

Dynamic Experiments on Two Pile Groups, 395

Effects of Multiple Modes on Rayleigh Wave Dispersion Characteristics, 449

Free Vibration Analysis of Curved Thin-Walled Girder Bridges, 918

Frequency Domain Analysis of Undamped Systems, 197

Hypar Shell on Pasternak Foundation, 230

Identification of Soil Properties from Foundation Impedance Functions, 406

Interactive Base-Isolation Foundation System: II. Parametric Study, 278

Modal Identification Algorithm with Unmeasured Input, 45

Modal Synthesis Method for General Dynamic Systems, 241

Nonlinear Free Vibration of Laminated Composite Plates, 164

Pipeline Response to Pile Driving and Adjacent Excavation, 383

Quantitative NDE Technique for Assessing Damages in Beam Structures, 240

Theoretical Study of Crack-Induced Eigenfrequency Changes on Beam Structures, 177

Use of Short-Period Microtremors for V_s Profiling, 450

Vibration Control of Beams by Beam-Type Dynamic Vibration Absorbers, 169

Vibration of Pedestrian Overpass, 706

Vibration analysis

Mutual Residual Energy Method for Parameter Estimation in Structures, 769

Vibration control

TMDS for Vibration Control of Systems with Uncertain Properties, 944

Tuned Mass Dampers for Balcony Vibration Control, 797

Tuned Mass Dampers to Control Floor Vibration from Humans, 798

Using Component Mode Synthesis and Static Shapes for Tuning TMDs, 799

Vibration Control of Beams by Beam-Type Dynamic Vibration Absorbers, 169

Vibration Control of Beams with Embedded Smart Composite Material, 49

Wind Effects on Base-Isolated Structures, 255

Vibration damping

Case Studies of Structures with Man-Induced Vibrations, 791

Vibration of Pedestrian Overpass, 706

Vibration measurement

Measured to the Max, 1216

Vibratory compactors

Damage of Entryway Stairs due to Settlement of Gravel Backfill, 714

Viruses

Evaluation of Ozone Disinfection Systems: Characteristic Concentration C, 336

Viscoelasticity

Effect of Ambient Temperature on Viscoelastically Damped Structure, 867

Seismic Analysis Design of Frames with Viscoelastic Connections, 894

Seismic Design of Viscoelastic Dampers for Structural Applications, 835

Wave Attenuation in Viscoelastic Continuum with Fading Memory, 248

Viscosity

Collisional Restitution Dependence on Viscosity, 211

Viscous flow

About Moving Contact Lines, 198

Collisional Restitution Dependence on Viscosity, 211

Void ratio

Equations for Compression Index Approximation, 376

Void Ratio of Noncohesive Soils and Similar Materials, 438

VOIDS

Dynamic Stiffness Analysis of Concrete Pavement Slabs, 1003

Dynamic Stresses in Granular Assemblies with Microstructural Defects, 165

Void Ratio of Noncohesive Soils and Similar Materials, 438

Volatile organic chemicals

Dual-System Cleanup, 1189

Migration of Chloroform in Aquifers, 315

Modeling of Soil Venting Processes to Remediate Unsaturated Soils, 314

Removal of 1,2 Dibromo-3-Chloropropane by Countercurrent Cascade Air Stripping, 319

Volume change

Density Changes During Undrained Loading—Membrane Compliance, 470

Swell versus Saturation for Compacted Clay, 436

Volume measure

Estimating Earthwork Volumes of Curved Roadways: Mathematical Model, 1021

Vortex shedding

Scour Around a Vertical Pile in Waves, 1078

Vortices

Temporal Variation of Scour Around Circular Bridge Piers, 532

Walls

Analysis of Buildings Using Strain-Based Element with Rotational DOFs, 825

Backfill-Stiffened Foundation Wall Design, 465

Development of Design Spectra for Actively Controlled Wall-Frame Buildings, 224

Ductility and Detailing Requirements of Bearing Wall Buildings, 849

Masonry Wall and Window System Leakage Investigation for University Building, 712

Nonlinear Finite-Element Model for Light-Frame Stud Walls, 933

Out-of-Plane Seismic Response of Reinforced Masonry Walls, 896

Performance of Masonry Walls: Case Study in Kuwait, 678

Water Penetration in Laterally Loaded Brick-Wall Panels, 703

Warpage

Free Vibration Analysis of Curved Thin-Walled Girder Bridges, 918

Stiffness Matrix for Nonlinear Analysis of Thin-Walled Frames, 265

Waste disposal

Moisture and Suction in Sanitary Landfills in Semi-arid Areas, 359

QSAR Parameters for Toxicity of Organic Chemicals to *Nitrobacter*, 307

Waste management

Beginning of Motion for Selected Unanchored Residue Materials, 614

Canada's Green Plan: Unique Approach to Preserving Environment, 751

Environmental Engineering: Saving a Threatened Resource—In Search of Solutions, 1246

Planning Water Supply and Sanitation Projects in Developing Countries, 1058

Utilization of Waste Materials in Civil Engineering Construction, 1274

Waste processing facilities

VOCs: The New Effluent, 1138

Waste recycling

The Environment is Good Business in France, 1145

Waste site cleanup

Cleaning Up Chromium, 1146

Coal-Gas Conundrum, 1140

Electroosmotic Removal of Gasoline Hydrocarbons and TCE From Clay, 310

Reassessing the Risk Assessment, 1139

Value Engineering at a Superfund Site, 1143

Waste sites

Coal-Gas Conundrum, 1140

Grouting Against Hazwaste, 1165

Reassessing the Risk Assessment, 1139

Waste stabilization ponds

Pilot Waste-Stabilization Pond in Tanzania, 323

Waste utilization

Utilization of Waste Materials in Civil Engineering Construction, 1274

Wasteload allocation

Comparison of Optimization Formulations for Waste-Load Allocations, 343

Wastewater

Measuring Ozone by Indigo Method: Interference of Suspended Material, 367

Sludge Loading Rates for Forest Land, 317

Wastewater disposal

Design Procedures for Effluent Discharge to Estuaries During Ebb Tide, 327

Wastewater treatment

Activity of Biomass in RBC System Treating Pulp Industrial Wastewater, 351

Boston's City within a City, 1206

The Caisson Solution, 1226

Design of Municipal Wastewater Treatment Plants, 1241

Expert System for Anaerobic-Digestion-Process Operation, 364

Lessons Learned—Milwaukee Water Pollution Abatement Program, 656

Metallurgical Residue for Solubilization of Metals from Sewage Sludge, 355

Modeling and Pilot-Scale Experimental Verification for Predenitrification Process, 308

Modeling of Toxic Wastewater Treatment by Expanded-Bed Anaerobic GAC Reactors, 337

Motown Tunneling, 1154

Operational Strategies for Predenitrification Process, 309

pH Control in Anaerobic Treatment of Industrial Wastewater, 340

Radiation Energy Treatment of Water, Wastewater and Sludge: A State-of-the-Art Report, 1265

Reuse Rules, 1183

Sampling of Wastewater Effluent, 318

Type II Sedimentation: Removal Efficiency from Column-Settling Tests, 334

Wastewater under Home Plate, 1212

Waterfall Aeration Works, 1209

Wastewater use

Reuse Rules, 1183

Water

Moisture Migration Through Concrete Floor Slabs, 707

Water balance

Modeling Irrigation Schedules for Lowland Rice with Stochastic Rainfall, 573

Moisture and Suction in Sanitary Landfills in Semiarid Areas, 359

Stochastic Model for Soil Moisture Deficit in Irrigated Lands, 608

Water-Balance Model of Two Conservancies in Guyana, 606

Water conservation

Design and Operation of On-Farm Irrigation Ponds, 618

Irrigation and Drainage: Saving a Threatened Resource—In Search of Solutions, 1257

Research/Application of System Engineering to Water Resources Systems, 1057

Water consumption

Equation for Evaporation Pan to Evapotranspiration Conversions, 642

Water content

Equations for Compression Index Approximation, 376

Evaluation and Control of Collapsible Soils, 447

Water demand

Adequacy of Surface Water-Supply Systems: Case Study, 1073

The Desalination Situation, 1188

Design and Operation of On-Farm Irrigation Ponds, 618

Evapotranspiration and Irrigation Water Requirements, 2

Managing Lower Colorado River, 1056

Water Resources Planning and Management: Saving a Threatened Resource—In Search of Solutions, 1275

Water depth

Velocity Distribution Inside and Above Branched Flexible Roughness, 636

Water discharge

Design Procedures for Effluent Discharge to Estuaries During Ebb Tide, 327

Linking Data Bases to Hydraulic Computations, 63

Small Parshall Flume Rating Correction, 514

Water distribution

Calculating Flow in Manifold and Orifice System, 342

Efficient Calculation of Transient Flow in Simple Pipe Networks, 527

Multilayered, Priority-Based Simulation of Conjunctive Facilities, 1038

Multireservoir Sewer-Network Control via Multivariable Feedback, 1071

Optimal Irrigation Delivery System Design under Uncertainty, 602

Optimal Locations of Monitoring Stations in Water Distribution System, 306

Optimal Pump Scheduling in Water-Supply Networks, 1062

Optimization Model for Alternative Use of Different Quality Irrigation Waters, 587

Optimization-Availability-Based Design of Water-Distribution Networks, 494

Rationalizing Water Requirements with Aid of Fuzzy Allocation Model, 1055

Systems Analysis in Water-Distribution Network Design: From Theory to Practice, 1050

Working Conditions of Sprinkler to Optimize Application of Water, 635

Water flow

Bridge Pier Scour with Debris Accumulation, 545

EQSWP: Extended Unsteady-Flow Double-Sweep Equation Solver, 509

Flow in Trapezoidal Channels, 641

Hyperconcentrated Sand-Water Mixture Flows over Erodible Bed, 559

Local Scour at Bridge Abutments, 504

Reflection and Transmission of Water Wave by Porous Breakwater, 1106

Transportation of Demineralized Water: Case Study, 1005

Two-Dimensional Analysis of Furrow Infiltration, 627

Vadose Zone Composite Hydraulic Conductivity, 629

Velocity Distribution in Uniform Sediment-Laden Flow, 482

SUBJECT INDEX

Wave-Motion Stability in Canals with Automatic Controllers, 565

Water hammer

Efficient Calculation of Transient Flow in Simple Pipe Networks, 527

Water infiltration

Water Penetration in Laterally Loaded Brick-Wall Panels, 703

Water levels

Automated Operation of Pumping Stations in Russia, 610

Stage-Discharge Relationship in Tidal Rivers, 1088

Study of Open-Channel Dynamics as Controlled Process, 479

Water-Balance Model of Two Conservancies in Guyana, 606

Water-Level Control in Hydropower Plants, 151

Water-Level Oscillations in Esperance Harbour, 1101

Water management

Effects of Drainage and Water-Management Practices on Hydrology, 628

Hydrologic Model for Drained Forest Watershed, 589

Irrigation Land Management Model, 637

Reuse Simulation in Irrigated River Basin, 631

Water pipelines

Dallas Goes Trenchless, 1203

GIS: New York's Pipe Dream, 1136

Water pollution

Application of Three-Dimensional Lagrangian Residual Transport, 516

Diversion Oil Booms in Current, 1114

Mixing, Dispersion, and Resuspension in Vicinity of Ocean Wastewater Plume, 478

Water pollution control

Lessons Learned—Milwaukee Water Pollution Abatement Program, 656

Water quality

Application of Three-Dimensional Lagrangian Residual Transport, 516

Comparison of Optimization Formulations for Waste-Load Allocations, 343

Controlling Nitrogen in Coastal Waters, 1142

Efficiency of Jet Mixing of Temperature-Stratified Water, 328

Electroosmotic Contaminant-Removal Processes, 311

Environmental Engineering: Saving a Threatened Resource—In Search of Solutions, 1246

Estuarine and Coastal Modeling, 1247

Evaluation of Ozone Disinfection Systems: Characteristic Time T , 322

Improved First-Order Uncertainty Method for Water-Quality Modeling, 354

Integrated Assessment of Acid-Deposition Effects on Lake Acidification, 313

Measuring Ozone by Indigo Method: Interference of Suspended Material, 367

Model for Estimating Tidal Flushing of Small Embayments, 1117

Model of Fate and Accumulation of PCB Homologues in Hudson Estuary, 14

Water resources management

Optimization Model for Alternative Use of Different Quality Irrigation Waters, 587

Partitioning Phosphorus Loads: Implications for Lake Restoration, 1070

Removal of 1,2-Dibromo-3-Chloropropane by Countercurrent Cascade Air Stripping, 319

Reservoir Management and Thermal Power Generation, 1061

Simulating THM Formation Potential in Sacramento Delta: Part I, 1067

Simulating THM Formation Potential in the Sacramento Delta: Part II, 1068

Storm Runoff Detention for Pollutant Removal, 329

Surface and Subsurface Drainage of Metropolitan City in Arid Zone, 572

Water, Endangered Ecosystem: Assessment of Chemical Pollution, 335

Water-Quality Modeling for Decision Making, 1054

Water resources

Bayesian Inference for Feedback Control. I: Theory, 600

Multiojective Analysis of Multireservoir System, 1059

Nonparametric Framework for Long-Range Streamflow Forecasting, 1041

Reuse Rules, 1183

Risk-Based Decision Making in Water Resources V, 1266

Simulating THM Formation Potential in Sacramento Delta: Part I, 1067

Simulating THM Formation Potential in the Sacramento Delta: Part II, 1068

Systems Analysis Applications at Hydrologic Engineering Center, 1051

Water Resources Planning and Management: Saving a Threatened Resource—In Search of Solutions, 1275

Water-Balance Model of Two Conservancies in Guyana, 606

Water's New World, 1168

Water resources development

Water Resource Systems Models: Their Role in Planning, 1048

Water resources management

Decision Support System for Crop Planning during Droughts, 588

Improved First-Order Uncertainty Method for Water-Quality Modeling, 354

Irrigation and Drainage: Saving a Threatened Resource—In Search of Solutions, 1257

Managing Lower Colorado River, 1056

Multilayered, Priority-Based Simulation of Conjunctive Facilities, 1038

Partitioning Phosphorus Loads: Implications for Lake Restoration, 1070

Planning and Management of Water-Resource Systems in Developing Countries, 1072

Rainfall Intensity-Duration-Frequency Formula for India, 488

Rationalizing Water Requirements with Aid of Fuzzy Allocation Model, 1055

Research/Application of System Engineering to Water Resources Systems, 1057

Reuse Rules, 1183

- Risk-Based Decision Making in Water Resources V, 1266
- Surface and Subsurface Drainage of Metropolitan City in Arid Zone, 572
- Water Resource Systems Models: Their Role in Planning, 1048
- Water Resources Planning and Management: Saving a Threatened Resource—In Search of Solutions, 1275
- Water reuse**
- Reuse Rules, 1183
- Reuse Simulation in Irrigated River Basin, 631
- Surface and Subsurface Drainage of Metropolitan City in Arid Zone, 572
- Water storage**
- Identification of Control System for Canal with Night Storage, 597
- Water supply**
- Adequacy of Surface Water-Supply Systems: Case Study, 1073
- The Desalination Situation, 1188
- Hydraulic Engineering: Saving a Threatened Resource—In Search of Solutions, 1255
- Lifeline Earthquake Engineering in the Central and Eastern U.S., 1259
- Nonparametric Framework for Long-Range Streamflow Forecasting, 1041
- Planning Water Supply and Sanitation Projects in Developing Countries, 1058
- Softening by Fluidized Bed Crystallizers, 338
- Water supply forecasting**
- Improved Techniques in Regression-Based Streamflow Volume Forecasting, 1075
- Water supply systems**
- Adequacy of Surface Water-Supply Systems: Case Study, 1073
- Optimal Locations of Monitoring Stations in Water Distribution System, 306
- Optimal Pump Scheduling in Water-Supply Networks, 1062
- Optimization-Availability-Based Design of Water-Distribution Networks, 494
- Seattle Plays It Safe, 1187
- Turning on the Waterworks, 1190
- Water surface**
- Discharge Capacity for Curb-Opening Inlets, 529
- Side Weir in Triangular Channel, 640
- Water surface profiles**
- Open-Channel Flow Algorithm in Newton-Raphson Form, 594
- Water table**
- Drawdown Solutions with Variable Drainable Porosity, 599
- Including Uncertainty of Hydraulic Conductivity into Drainage Design, 624
- Manholes and Microtunneling, 1228
- Relating Crop-Yield Response to Water-Table Fluctuations, 579
- Water transportation**
- Two-Dimensional Leachate Estimation through Landfills, 487

Water treatment

- Dual-System Cleanup, 1189
- Effect of Collector Dosage on Metal Removal by Precipitation/Flotation, 363
- Engineering Behavior of Water Treatment Sludge, 358
- Evaluation of Ozone Disinfection Systems: Characteristic Time T, 322
- Evaluation of Ozone Disinfection Systems: Characteristic Concentration C, 336
- Lessons Learned—Milwaukee Water Pollution Abatement Program, 656
- Radiation Energy Treatment of Water, Wastewater and Sludge: A State-of-the-Art Report, 1265
- Softening by Fluidized Bed Crystallizers, 338
- TOC Removal by Coagulation and Softening, 333

Water treatment plants

- The Caisson Solution, 1226
- Design of Municipal Wastewater Treatment Plants, 1241

Water use

- Model for Prescribing Ground-Water Use Permits, 1069
- Multilayered, Priority-Based Simulation of Conjunctive Facilities, 1038
- Rationalizing Water Requirements with Aid of Fuzzy Allocation Model, 1055

Water waves

- Kinematics of 2-D Transient Water Waves Using Laser Doppler Anemometry, 1087
- Nonlinear Water Waves Generated by Submarine and Aerial Landslides, 1096
- Reflection and Transmission of Water Wave by Porous Breakwater, 1106
- Tuned Liquid Damper (TLD) for Suppressing Horizontal Motion of Structures, 275

Watersheds

- Effects of Drainage and Water-Management Practices on Hydrology, 628
- Hydraulic Engineering: Saving a Threatened Resource—In Search of Solutions, 1255
- Hydrologic Model for Drained Forest Watershed, 589
- Hydrologic Parameter Estimation Using Geographic Information System, 1066

Waterways

- Flow in Trapezoidal Channels, 641
- Laptop Automated Navigation Aid Positioning System with Differential GPS, 967

Wave action

- Irregular Wave Setup and Run-up on Beaches, 1102

Wave attenuation

- Dynamic Stresses in Granular Assemblies with Microstructural Defects, 165
- Hydraulic Design of Perforated Breakwaters, 1077
- Wave Attenuation in Viscoelastic Continuum with Fading Memory, 248

Wave damping

- Effects of Bottom Friction on Wave Breaking Using RCPWAVE Model, 1103

Wave diffraction

Effects of Bottom Friction on Wave Breaking Using RCPWAVE Model, 1103

Time-Domain Second-Order Wave Diffraction in Three Dimensions, 1109

Wave equations

Dynamic Compaction Analysis, 425

Wave Attenuation in Viscoelastic Continuum with Fading Memory, 248

Wave forces

Time-Domain Second-Order Wave Diffraction in Three Dimensions, 1109

User-Friendly PC-Based Design Package for Gravity-Type Seawalls, 1097

Wave Runup and Forces on Cylinders in Regular and Random Waves, 1116

Wave height

Measured Internal Kinematics for Shoaling Waves with Theoretical Comparisons, 1098

Prediction of Storm/Normal Beach Profiles, 1090

Stochastic Time-Series Representation of Wave Data, 1100

Wave propagation

Dynamic Stresses in Granular Assemblies with Microstructural Defects, 165

Effects of Multiple Modes on Rayleigh Wave Dispersion Characteristics, 449

Propagation of Long Waves Onto Shelf, 1080

Regolith Mechanics, Dynamics, and Foundations, 30

Use of Short-Period Microtremors for V_s Profiling, 450

Wave reflection

Considerations in Using Bragg Reflection for Storm Erosion Protection, 1081

Wave refraction

Beach-Nourishment Performance Predictions, 1113

Effects of Bottom Friction on Wave Breaking Using RCPWAVE Model, 1103

Shoaling and Decay of Two Wave Trains on Beach, 1110

Wave runup

Estimating Extreme Values of Run-Up on Beaches, 1094

Irregular Wave Setup and Run-up on Beaches, 1102

Shoreline Profile of Stokes-Mode Edge Waves, 1085

Wave Runup and Forces on Cylinders in Regular and Random Waves, 1116

Wave Runup on Smooth and Rock Slopes of Coastal Structures, 1111

Wave spectra

Estimating Wave-Induced Bottom Velocities at Vertical Wall, 1089

Irregular Wave Setup and Run-up on Beaches, 1102

Kinematics of Nonlinear Random Waves near Free Surface, 279

Shoaling and Decay of Two Wave Trains on Beach, 1110

Wave tanks

Laboratory Simulations of Directionally Spread Shoaling Waves, 1083

Wave velocity

Seasonal Soil Strength by Spectral Analysis of Surface Waves, 51

Waves

Armor Stability on Submerged Breakwaters, 1092

Component Wave Interactions and Irregular Wave Kinematics, 1104

EQSWP: Extended Unsteady-Flow Double-Sweep Equation Solver, 509

Estimating Wave-Induced Bottom Velocities at Vertical Wall, 1089

Interaction of Steep Waves with Vertical Walls, 1107

Irregular Wave Setup and Run-up on Beaches, 1102

Kinematics of 2-D Transient Water Waves Using Laser Doppler Anemometry, 1087

Laboratory Study of Oil Slick Subjected to Nearshore Circulation, 362

Parametric and External Excitation of Marine Risers, 209

Scour Around a Vertical Pile in Waves, 1078

Shoaling and Decay of Two Wave Trains on Beach, 1110

Shoreline Profile of Stokes-Mode Edge Waves, 1085

Stochastic Time-Series Representation of Wave Data, 1100

Time-Domain Second-Order Wave Diffraction in Three Dimensions, 1109

Wave-Induced Effective Stress in Seabed and Its Momentary Liquefaction, 1091

Wave-Motion Stability in Canals with Automatic Controllers, 565

Web beams

Commentary on Proposed Specification for Structural Steel Beams with Web Openings (with Design Example), 947

Proposed Specification for Structural Steel Beams with Web Openings, 946

Webs

Slab Behavior in Composite Beams at Openings. I: Analysis, 884

Slab Behavior in Composite Beams at Openings. II: Tests and Verification, 885

Wedges

Antiplane Problems of Monoclinic Material, 259

Weirs

Critical Depth Relations for Flow Measurement Design, 616

Flow and Energy Dissipation Over Stepped Gabion Weirs, 507

Innovative Reregulation Weirs, 1163

Momentum Model of Flow Past Weir, 644

The OCEA Awards of Merit, 1178

Side Weir in Triangular Channel, 640

Transients in Canal Network, 620

Weldments

Weldment Design for RHS Truss Connections. I: Applications, 912

Weldment Design for RHS Truss Connections. II: Experimentation, 913

Welds

Comments on L'Ambiance Plaza Lifting Collar/Shearheads, 710

Welds

Fatigue of Welded Cruciforms Subjected to Narrow-Band Loadings, 172

Wells

Evaluation of Collection-Well Parameters for DNAPL, 316

Taming Environmental Data, 1192

Wetlands

Creating Wetlands, 1186

The Greening of Greens, 1210

Water Resources Planning and Management: Saving a Threatened Resource—In Search of Solutions, 1275

Wharves

Ports '92, 1263

White noise

Nonstationary Response of Structures with Closely Spaced Frequencies, 235

Width

Deflections of Beams with Varying Rectangular Cross Section, 282

Flow Measurement with Rectangular Free Overfall, 639

Wind

BEST: New Satellite Mission Dedicated to Tropical System Energy Budget, 15

Control of Along-Wind Response of Structures by Mass and Liquid Dampers, 155

Effect of Static Offset on TLP Modeling, 158

Three-Dimensional Characteristics Model of Wind-Generated Turbulent Flow, 244

Wind-Induced Response of Structurally Asymmetric High-Rise Buildings, 768

Working Conditions of Sprinkler to Optimize Application of Water, 635

Wind forces

Control of Along-Wind Response of Structures by Mass and Liquid Dampers, 155

Coupled Vertical and Horizontal Galloping, 159

Frequency Domain Optimal Control of Wind-Excited Buildings, 303

Probabilistic Description of Buffeting Response of Long-Span Bridges, 300

Probabilistic Description of Buffeting Response of Long-Span Bridges: II, 301

Wind loads

Estimating Uplift Capacity of Light Steel Roof System, 804

Incorporating Load Sharing in Shear Wall Design of Light-Frame Structures, 948

Integrated Physical Model for Cylindrical Shells, 878

Wind Effects on Base-Isolated Structures, 255

Wind Loads on Buildings with Sawtooth Roofs, 780

Wind tunnel test

Wind Loads on Buildings with Sawtooth Roofs, 780

Wind velocity

Finite Element-Based Flutter Analysis of Cable-Suspended Bridges, 843

Wind waves

Field Performance and Analysis of Steep Riprap, 445

1992 ASCE TRANSACTIONS

Windows

Defects in Aluminum Windows and Impact on Dust and Air Infiltration, 705

Masonry Wall and Window System Leakage Investigation for University Building, 712

Wire mesh

Potential Gains Through Welded-Wire Fabric Reinforcement, 104

Wire rope

Free-Bending Fatigue Life Estimation of Cables at Points of Fixity, 258

Wire Recovery Length in Suspension Bridge Cable, 942

Wisconsin

Loss of PCBs from Municipal-Sludge-Treated Farmland, 10

Women

Future Resources for Engineering, 727

Women in Civil Engineering—Graduate's Perspective, 726

Wood

Design Charts for Timber Beam-Columns, 789

Determination of Critical *J*-Integral for Wood, 854

Determination of Fracture Toughness for Wood, 853

Hygrothermal Effects on Load-Duration Behavior of Structural Lumber, 815

Hygrothermal Effects on Mechanical Properties of Lumber, 787

Load-Duration Effects in Structural Lumber: Strain Energy Approach, 888

Manufactured Wood Joists—Noncollapse Failure, 709

Moisture Content and Reliability-Based Design for Wood Members, 955

Moisture Effects on Flexural Performance of Wood Fiber-Cement Composites, 692

Reliability of Bolted Wood Connections, 949

Strength and Efficiency of Wood Box Columns, 796

Wood Connections with Heavy Bolts and Steel Plates, 4

Wood beams

Design of Notched Wood Beams, 891

Elastic Wood Properties from Dynamic Tests and Computer Modeling, 905

Re-examination of Ylinen and Other Column Equations, 908

Wood preservatives

Effects of CCA Treatment and Drying on Tensile Strength of Lumber, 689

Wooden structures

Bolted Connections in Wood under Bending/Tension Loading, 813

Design of Notched Wood Beams, 891

FRP-Reinforced Wood as Structural Material, 694

Incorporating Load Sharing in Shear Wall Design of Light-Frame Structures, 948

Limit-State Interactions in Reliability-Based Design for Wood Structures, 802

Modeling Load-Slip Behavior of Nailed Joints, 700

Nonlinear Finite-Element Model for Light-Frame Stud Walls, 933

SUBJECT INDEX

Young's modulus

Prestressed FRP Sheets as External Reinforcement of Wood Members, 829

Working conditions

Effects of Scheduled Overtime on Labor Productivity, 93

Writing

Improving Specifications, 1202

Yield

Effect of Nitrogen on Yield Using Bioenergetics Theory, 356

Fine Ottawa Sand: Experimental Behavior and Theoretical Predictions, 469

Out-of-Plane Strengths of Steel Beams, 868

Strength of Lag-Screw Connections, 916

Yield Safety, Cracking Control, and Moment Redistribution, 781

Yielding of Mexico City Clay and Other Natural Clays, 417

Yield line method

Ultimate Loads of Continuous Composite Bridges, 902

Yield strength

Effect of Strain Rate on Material Properties of Sheet Steels, 934

Yield stress

Effect of Strain Rate on Cold-Formed Steel Stub Columns, 935

Young's modulus

Elastic Wood Properties from Dynamic Tests and Computer Modeling, 905

Further Contributions to Reliability-Based Pile-Settlement Analysis, 403

Author Index

- Abdalla, Hany**
see Kennedy, John B., 783
- Abdalla, Jamal A.**
 Object-Oriented Finite Element and Graphics Data-Translation Facility, 77
see Howard, H. Craig, 61
- Abdel-Ghaffar, Ahmed M.**
see Zeghal, Mourad, 381
- Abdelsalam, M. W.**
 Flow Capacity through Wide and Submerged Vegetal Channels, 622
- Abdelwahab, Walid**
see Morrall, John, 992
- Abduljawwad, Sahel N.**
 Mixed Hardening, Three-Invariants Dependent Cap Model, 191
- Abdulla, Ali A.**
see Kiousis, Panos D., 200
- Abdullah, Hasan**
see Kaniraj, Shenbaga R., 474
- Åberg, B.**
 Hydraulic Conductivity of Noncohesive Soils, 439
 Void Ratio of Noncohesive Soils and Similar Materials, 438
- Abou-Izzeddine, Wajdi**
see Haroun, Medhat A., 800
see Haroun, Medhat A., 801
- Aboul-Ella, Mohammad**
see Al-Sahili, Khaled, 1024
- AbouRizk, Simaan M.**
 Statistical Properties of Construction Duration Data, 121
see Hijazi, Adib M., 131
- Abreu, José**
see Cabrera, Enrique, 566
- Abt, Steven R.**
 Analysis of ARS Low-Drop Grade-Control Structure, 554
 Small Parshall Flume Rating Correction, 514
 Trash Rack Blockage in Supercritical Flow, 570
see Dortch, Mark S., 516
- Abudayyeh, Osama Y.**
see Rasdorf, William J., 62
- Abuyan, J. A.**
see Gorji, M., 25
- Acar, Yalcin B.**
 Electrokinetic Cleanups, 1211
 Phenol Removal from Kaolinite by Electrokinetics, 466
- Acheampong, Kofi**
see Chang, Ching S., 254
- Ackerman, Josef Daniel**
 Investigation of Zebra Mussel Adhesion Strength Using a Rotating Disk, 349
- Acri, Jim**
see Reed, Arthur P., 691
- Adali, S.**
see Sloss, J. M., 24
- Adam, Rex B.**
see Joshi, Ramesh C., 687
- Adams, Teresa M.**
 Integrating Facility Delivery through Spatial Information, 1025
- Adams, Trevor**
see Argiris, Leo, 1130
- Adeli, Hojjat**
 Concurrent Optimization of Large Structures. I: Algorithms, 21
 Concurrent Optimization of Large Structures. II: Applications, 22
- Adluri, Seshu Madhava Rao**
 Schifferized Angle Struts, 865
- Afzal, Javadi**
 Optimization Model for Alternative Use of Different Quality Irrigation Waters, 587
- Agassi, Nissim**
see Ettouney, Mohammed, 36
- Agerskov, Henning**
 Fatigue Life of Offshore Steel Structures Under Stochastic Loading, 874
- Aguirre, Manuel**
 Structural Seismic Damper, 823
- Ahmad, A.**
see Paliwal, D. N., 230
- Ahmad, M.**
 Modified Stub-Girder Floor System: Full-Scale Tests, 939
- Ahmad, S.**
see Bharadwaj, A., 407
- Ahmad, Shahid**
 Torsional Radiation Damping of Arbitrarily Shaped Embedded Foundations, 428
 Torsional Stiffness of Arbitrarily Shaped Embedded Foundations, 427
- Ahmad, Zahoor**
see Gan, Thian Yew, 1076
- Ahmadi, Goodarz**
see Chen, Yu, 255
- Ahmed, Samir I.**
see Gates, Timothy K., 602
- Ahmed, Shabbir**
 Two-Dimensional Leachate Estimation through Landfills, 487

Ahmed, Shamim

Transaction-Management Issues in Collaborative Engineering, 65

Ahmed, Siddig E.

Alluvial Canals Adequacy, 609

Prediction of Natural Channel Hydraulic Roughness, 615

Ahn, Ki Jun

Interactive Base-Isolation Foundation System: I. Finite Element Formulation, 277

Interactive Base-Isolation Foundation System: II. Parametric Study, 278

Aida, Tadayoshi

Vibration Control of Beams by Beam-Type Dynamic Vibration Absorbers, 169

Akan, A. Osman

Horton Infiltration Equation Revisited, 630

Storm Runoff Detention for Pollutant Removal, 329

Akatsuka, M.

see Kawasaki, H., 682

Akgul, Ferhat

Structural Design of Lunar Radio Telescope Using Interactive CAD, 16

Akpokodje, Euvie G.

Factors Controlling Properties and Durability of Concretionary Laterite Gravel Aggregates, 676

Aktan, Ahmet E.

see Raghavendrachar, Madhwesh, 879

Al-Adeeb, Adnan M.

Performance of Masonry Walls: Case Study in Kuwait, 678

Alagcan, Manuel

see Moridis, George J., 611

Al-Amry, Muhammad S.

see Quraishi, Ali A., 1005

Alavian, Vahid

Density Currents Entering Lakes and Reservoirs, 557

Use of Density Current to Modify Thermal Structure of TVA Reservoirs, 506

Al-Bermani, Faris G. A.

Elastoplastic Nonlinear Analysis of Flexibly Jointed Space Frames, 763

Albers, J. M.

see White, T. D., 1018

Albrecht, Pedro

see Namini, Ahmad, 843

Al-Buraim, Isa M.

see Abduljawwad, Sahel N., 191

Alcrudo, F.

see Garcia-Navarro, P., 550

Alemán, J. D.

see Diaz-Rodriguez, J. A., 417

Alexandridis, A.

Tolerance Limits for Geometric Imperfections in Hyperbolic Cooling Towers, 873

Alfaro, Marolo C.

see Bergado, Dennes T., 419

see Bergado, Dennes T., 421

Al-Gadhib, Ali H.

Comparative Evaluation of Plasticity Theories against Tension-Torsion Test at Finite Strain, 281

Al-Gahtani, A. S.

see Rasheeduzzafar, 696

Al-Ghamedy, Hamdan N.

see Abduljawwad, Sahel N., 191

Al-Khafaji, A. W. N.

Equations for Compression Index Approximation, 376

Alkire, Bernard D.

Seasonal Soil Strength by Spectral Analysis of Surface Waves, 51

Allen, D. Grant

see Ackerman, Josef Daniel, 349

Allen, Linda

Issues in Human Resources: Managing Talent in the 21st Century, 666

Allen, R. G., ed.

see Jensen, M. E., ed., 2

Allen, Robert H., ed.

Expert Systems for Civil Engineers: Knowledge Representation, 1249

Allen, Thomas

see Desai, Chandra S., 44

Alliche, A.

Damage of Concrete in Fatigue, 287

Al-Mana, Abdulaziz Ibrahim

see Maslehuddin, Mohammed, 680

Almeida, A. V.

Dallas Goes Trenchless, 1203

Almudaiheem, Jamal A.

see Al-Sugair, Faisal H., 697

Al-Mudhaf, Hayfaa A.

see Al-Adeeb, Adnan M., 678

Al-Musaid, Abdulaziz A.

see Bubshait, Abdulaziz A., 655

Al-Saadoun, S. S.

see Rasheeduzzafar, 696

Al-Sahili, Khaled

Accessibility of Public Services in Irbid, Jordan, 1024

Alshaikh, Abdulmohsen A.

see Gates, Timothy K., 602

Alshegeir, Abdulsalam

Computer Graphics in Detailing Strut-Tie Models, 72

Alsiwat, Jaber M.

Reinforcement Anchorage Slip under Monotonic Loading, 892

see Saatcioglu, Murat, 893

- Al-Sugair, Faisal H.**
Variations in Measured Resilient Modulus of Asphalt Mixes, 697
- Altayeb, Saleh**
Efficacy of Drug Testing Programs Implemented by Contractors, 137
- Al-Tayyib, Abdul-Hamid J.**
see Khan, Mohammad Shamim, 693
- Altin, Sinan**
Hysteretic Response of Reinforced-Concrete Infilled Frames, 876
- Altobelli, Frank R.**
see Bernold, Leonhard E., 68
- Alwis, W. A. M.**
see Wang, C. M., 193
see Wang, C. M., 283
- Amadei, Bernard**
Stability of Concrete Gravity Dams with Drained and Finite Cracks, 149
- American Society of Civil Engineers, Publications Division**
ASCE Annual Combined Index—1991, 1236
Transactions of the American Society of Civil Engineers—1991, 1272
- Amirkhanian, S. N.**
see Juang, C. H., 1012
- Amirkhanian, Serji N.**
Expert System for Equipment Selection for Earth-Moving Operations, 109
- Anandarajah, A.**
Numerical Study of Soil Anisotropy, 167
see Lu, Ning, 399
- Andersen, Donald A.**
Civil Engineering Capstone Design Course, 746
- Andersland, O. B.**
see Al-Khafaji, A. W. N., 376
- Anderson, G. K.**
pH Control in Anaerobic Treatment of Industrial Wastewater, 340
- Anderson, Loren R.**
see Bergado, Dennes T., 421
- Andrew, Richard D.**
Restricting Rockfalls, 1214
- Andrews, Elizabeth S.**
Multilayered, Priority-Based Simulation of Conjunction Facilities, 1038
- Andrews, John F.**
see Barnett, Michael W., 364
- Ang, Alfredo H.-S.**
see Ang, George L., 221
- Ang, George L.**
Optimal Importance-Sampling Density Estimator, 221
- Anmangandla, Sharath**
see Melching, Charles S., 354
- Ansari, Farhad, ed.**
Nondestructive Testing of Concrete Elements and Structures, 1261
- Ansari, N. I.**
see Qasim, S. R., 333
- Ansapach, Marie E.**
see Wolfe, Robert E., 728
- Anton, Walter F.**
Seattle Plays It Safe, 1187
- Antoniou, P.**
see Hamilton, J., 308
- Aoki, Tetsuhiko**
see Migita, Yasuhiro, 904
- Ara, Samia**
see Siddharthan, Raj, 782
- Aragués, Ramón**
see Quilez, Dolores, 596
- Arasan, V. Thamizh**
see Rengaraju, V. R., 991
- Arciszewski, Tomasz, ed.**
Knowledge Acquisition in Civil Engineering, 1258
- Argiris, Leo**
Engineering a Monument, Evoking a Nightmare, 1130
- Arockiasamy, M.**
Vibration Control of Beams with Embedded Smart Composite Material, 49
- Aron, Gert**
Adaptation of Horton and SCS Infiltration Equations to Complex Storms, 591
- Arslan, Awadis B.**
see Weltz, Mark A., 626
- Arumala, J. O.**
Water Penetration in Laterally Loaded Brick-Wall Panels, 703
- ASCE Committee on Cable-Stayed Bridges**
Guidelines for Design of Cable-Stayed Bridges, 1251
- ASCE Committee on Fire Protection, Structural Division, American Society of Civil Engineers**
Structural Fire Protection, 1271
- ASCE Task Committee on Design Criteria for Composite Structures in Steel and Concrete**
Commentary on Proposed Specification for Structural Steel Beams with Web Openings (with Design Example), 947
- ASCE Task Committee on Design Criteria for Composite Structures in Steel and Concrete**
Proposed Specification for Structural Steel Beams with Web Openings, 946
- ASCE Task Committee on Sea-Level Rise and Its Effects on Bays and Estuaries**
Effects of Sea-Level Rise on Bays and Estuaries, 476
- ASCE Task Committee on Sediment Transport and Aquatic Habitats, Sedimentation Committee**
Sediment and Aquatic Habitat in River Systems, 505

- Ashkar, Fahim**
Separation of Skewness: Reality or Regional Artifact?, 496
- Ashmun, Robert G.**
see Tavakoli, Amir, 738
- Aslani, Farhang**
Stitch Spacing and End Fixity in Seismic-Resistant Boxed Angle Braces, 917
- Aswathanarayana, P. A.**
see Chacko, Baby, 150
- Auclair, J. C.**
see Blais, J. F., 348
- Audibert, J. M. E.**
Reserve Capacity Design Method (RCDM) for Deep-water Piled Foundations, 1079
- Auer, Martin T.**
see Heidtke, Thomas M., 1070
- Austin, M. A.**
Solid Modeling of RC Beams: I. Data Structures and Algorithms, 81
see Preston, J. L., 82
- Austin, Teresa**
From Sludge to Brokered Biosolids, 1185
Landfill-Cover Conflict, 1234
The OCEA Awards of Merit, 1178
Pay As You Grow, 1135
The Roads Ahead, 1152
U.S. Sludge Digesters: From Pancakes to Eggs, 1205
VOCs: The New Effluent, 1138
- Auvinet, Gabriel**
see Rossa, Olivier, 432
- Avent, R. Richard**
see de Béjar, Luis A., 951
see de Béjar, Luis A., 952
- Aw, Y. B.**
see Koo, T. K., 961
- Awal, Abu S. M. Abdul**
Creep Recovery of Prepacked Aggregate Concrete, 695
- Awwad, Haitham M.**
Adaptive Parameter Estimation for Multisite Hydrologic Forecasting, 539
- Ayyub, Bilal M.**
Prestressed Composite Girders. I: Experimental Study for Negative Moment, 910
Prestressed Composite Girders. II: Analytical Study for Negative Moment, 911
see Johnson, Peggy A., 519
- Azarkhin, Alexander**
Bending of Thin Plate with Three-Point Support, 838
- Azhar, Aftab H.**
Modeling Irrigation Schedules for Lowland Rice with Stochastic Rainfall, 573
- Babu, G. L. Siva Kumar**
see Pandian, N. S., 398
- Bacchus, L.**
see de Beer, J., 606
- Bachman, Patrick M.**
see Roberts, Carin L., 1217
- Bachmann, H.**
Case Studies of Structures with Man-Induced Vibrations, 791
- Bagherzadeh, H. M.**
see Chu, S. T., 583
- Bai, Mao**
see Elsworth, Derek, 374
- Bailard, James A.**
Considerations in Using Bragg Reflection for Storm Erosion Protection, 1081
- Baines, W. D.**
Destruction of Stratification By Bubble Plume, 501
- Baird, William F., ed.**
see Magoon, Orville T., ed., 1242
- Bakeer, Reda M.**
see Sayed, Sayed M., 382
- Baker, Nancy J.**
see Amirkhanian, Serji N., 109
- Baker, Nelson C.**
Computing in Civil Engineering: Current Trends and Future Directions, 737
- Bakht, Baidar**
Ultimate Load Test of Slab-on-Girder Bridge, 848
- Bakker, Willem T.**
see Winterwerp, Johan C., 559
- Bakos, Jack D., Jr.**
Strategies to Stem Declining Engineering Enrollments, 743
Women in Civil Engineering—Graduate's Perspective, 726
- Bakry, M. F.**
see Abdelsalam, M. W., 622
- Bakry, Mohamed F.**
Field-Measured Hydraulic Resistance Characteristics in Vegetation-Infested Canals, 590
- Balabaskaran, V.**
see Chacko, Baby, 150
- Balachandran, S.**
see Indraratna, B., 369
- Balaguru, Perumalsamy N.**
see Ezeldin, A. Samer, 702
- Balasubramaniam, A. S.**
see Bergado, Dennes T., 419
see Indraratna, B., 369
- Ball, J. M.**
see Blight, G. E., 359
- Ballantyne, Donald B., ed.**
Lifeline Earthquake Engineering in the Central and Eastern U.S., 1259
- Bamford, S. R.**
see Audibert, J. M. E., 1079

- Bandara, S.**
Optimum Geometries for Pier-Type Airport Terminals, 979
- Banerjee, P. K.**
see Mamoon, S. M., 162
- Banerjee, Sunirmal**
Analytical Solution of Steady Seepage into Double-Walled Cofferdams, 185
Simple Double-Hardening Model for Geomaterials, 411
- Bank, Lawrence C.**
see Mosallam, Ayman S., 866
- Banthia, Nemkumar**
Permeability of Roller Compacted Concrete, 674
- Baptista, A. M.**
see Westerink, J. J., 551
- Bardet, J. P.**
Shear-Band Analysis in Idealized Granular Material, 178
- Barker, M. G.**
Shakedown Limit State of Compact Steel Girder Bridges, 812
- Barnes, H. M.**
see Winandy, J. E., 689
- Barnett, Michael W.**
Expert System for Anaerobic-Digestion-Process Operation, 364
- Barone, F. S.**
Estimation of Chloride Diffusion Coefficient and Tortuosity Factor for Mudstone, 420
- Baruch, M.**
see Frostig, Y., 214
- Baryla, Jean-Michel**
Method for Preevaluation and Selection of Road Projects in Gabon, 978
- Basak, Bharat C.**
see Swamee, Prabhata K., 575
- Basma, Adnan A.**
Evaluation and Control of Collapsible Soils, 447
- Basu, P. K.**
see Lee, Shyi-Lin, 844
- Bathurst, J. C.**
see Wicks, J. M., 621
- Bathurst, Richard J.**
see Yogendrakumar, Muthucumarasamy, 426
- Baugh, John W., Jr.**
Data Abstraction in Engineering Software Development, 76
- Baus, Ronald L.**
AASHTO Direct Structural Capacity Method Error Analysis, 969
- Bautista, E.**
Hydrodynamic Furrow Irrigation Model with Specified Space Steps, 603
- Bayly, D. A.**
see Teskey, W. F., 957
- Bažant, Zdeněk P.**
Compression Failure of Quasibrittle Material: Nonlocal Microplane Model, 186
Drying and Cracking Effects in Box-Girder Bridge Segment, 773
see Özbolt, Joško, 234
- Bea, Robert G.**
Pile Capacity for Axial Cyclic Loadings, 370
- Beach, J. E.**
see Sarkani, S., 172
- Beall, Robert P.**
see Ioannides, Socrates, 1123
- Becker, Bryan R.**
see Lai, Yew Chin, 805
- Becker, Leonard**
see Yeh, William W.-G., 1074
- Bedford, Keith, ed.**
see Spaulding, Malcolm L., ed., 1247
- Beech, Gary D.**
Lessons Learned—Milwaukee Water Pollution Abatement Program, 656
- Beede, Susan**
see Monahan, Rosemary, 1142
- Belfadhel, Mahrez Ben**
see Lefebvre, Guy, 445
- Beliveau, Y. J.**
see Morad, A. A., 66
- Bell, Lansford C.**
see Gibson, George E., Jr., 92
- Bell, Larry S.**
Indigenous Resource Utilization in Design of Advanced Lunar Facility, 31
- Bella, David A.**
see Luthy, Richard G., 752
- Benabdallah, Salah**
Multiple Subregion Allocation Models, 1026
- Benak, J. M.**
see Mesri, G., 12
- Benaroya, H.**
Design and Construction Considerations for Lunar Outpost, 33
- Benaroya, Haym**
Framework for Evaluation of Lunar Base Structural Concepts, 28
see Ettouney, Mohammed, 36
see Ettouney, Mohammed M., 30
- Benekohal, R. F.**
see Linkenheld, J. S., 982
- Benekohal, Rahim F.**
Procedures for Estimating Accident Reductions on Two-Lane Highways, 975
- Benjamin, Bennie L.**
The Caisson Solution, 1226
- Bennett, Gary F.**
see Gopalratnam, Venbakm C., 363

- Bentley, David
Project Management: Keys to Success, 1153
- Benzley, Steven E.
see Kou, Chang-Huan, 918
- Bergado, Dennes T.
Inverse Analysis of Geotechnical Parameters on Improved Soft Bangkok Clay, 419
Pullout Tests Using Steel Grid Reinforcements with Low-Quality Backfill, 421
- Berg-Andreassen, Jan A.
Conflict of Interest in Deep-Draft Anchorage Usage—Application of QT, 1082
- Berger, Horst
Tensile Terminal, 1215
- Bergeson, Kenneth L., ed.
see Inyang, Hilary I., ed., 1274
- Bergling, Thad
see Omelchenko, Victor, 1171
- Berke, Neal
see Tourney, Paul, 1231
- Berlamont, Jean
see Liu, Fubo, 619
- Bernal, Dionisio
Instability of Buildings Subjected to Earthquakes, 882
- Bernier, Jacques
see Ashkar, Fahim, 496
- Bernold, Leonhard E.
Computer-Controlled Brick Masonry, 68
Potential Gains Through Welded-Wire Fabric Reinforcement, 104
see Dick, Richard D., 19
see Goodings, Deborah J., 18
- Bert, Charles W.
see Kukreti, Anant R., 225
- Bertero, Raul D.
see Puppo, Alberto H., 852
- Bertholet, Jean-Luc
see Carlevaro, Fabrizio, 146
- Berthouex, P. M.
see Edil, Tuncer B., 444
- Berthouex, P. Mac
Loss of PCBs from Municipal-Sludge-Treated Farmland, 10
- Beskos, Dimitri E.
see Vgenopoulou, Irene, 261
- Bewtra, J. K.
see Machina, D. W., 321
- Bezuijen, A.
see van Rhee, C., 431
- Bhandar, R. K.
see Saran, Swami, 467
- Bharadwaj, A.
Rocking Impedance of Embedded Strip Foundations in Layered Soil, 407
- Bhasin, Rajinder
Norway's Olympic Cavern, 1230
- Bhaskar, Nageshwar R.
Hydrologic Parameter Estimation Using Geographic Information System, 1066
- Bhattacharya, Ashim K.
see Pandey, Ravi S., 599
- Bhimaraddi, Alavandi
Nonlinear Free Vibration of Laminated Composite Plates, 164
- Bhowmik, Nani G., ed.
see Jennings, Marshall, ed., 1255
- Bierman, Victor J., Jr.
see Bonner, James S., 312
see Preston, Stephen D., 331
- Bilal, Suha
see Thomas, H. Randolph, 127
- Bild, S.
Out-of-Plane Strengths of Steel Beams, 868
- Binienda, W. K.
see Robinson, D. N., 251
- Birkemoe, P. C.
see Prion, H. G. L., 826
- Bischoff, John A.
Designing Reinforced Rock, 1125
- Bishop, Walter A., Jr.
Wastewater under Home Plate, 1212
- Bjorager, P.
see Karamchandani, A., 794
- Bjorager, Peter
see Ronold, Knut O., 384
- Bjorhovde, Reidar
see Call, Russell D., 4
- Blais, J. F.
Bioleaching of Metals from Sewage Sludge by Sulfur-Oxidizing Bacteria, 348
- Blaschke, Joseph D.
see Turner, Daniel S., 1179
- Blight, G. E.
Moisture and Suction in Sanitary Landfills in Semiarid Areas, 359
- Blight, Geoffrey E.
Design Implications of Measured Pressures and Strains in Silos, 909
- Blight, J. J.
see Blight, G. E., 359
- Bloyd, Cary N.
see Rubin, Edward S., 313
- Blum, D. J. W.
see Tang, N. H., 307
- Blumberg, Alan, ed.
see Spaulding, Malcolm L., ed., 1247

AUTHOR INDEX

Broeren

- Blumberg, Alan F.
Modeling Vertical Structure of Open-Channel Flows, 534
- Bobée, Bernard
see Ashkar, Fahim, 496
- Bocker, Andrea Giorgi
see Rinaldi, Peter L., 1200
- Bogardi, Istvan
see Lee, Yong W., 1045
- Bohnhoff, David R.
Modeling Horizontally Nail-Laminated Beams, 836
- Boicourt, William C.
see Sanford, Lawrence P., 1117
- Boisvert, Jean
see Banthia, Nemkumar, 674
- Boley, Gary
see Ham, Robert K., 350
- Bonner, James S.
Transport of Low-Level Radioactive Soil at Deep-Ocean Disposal Site, 312
- Bonneson, James A.
Change Intervals and Lost Time at Single-Point Urban Interchanges, 1009
- Bonta, James V.
Estimating Peak Flows from Small Agricultural Watersheds, 580
- Boo, Sung Y.
see Kim, Cheung H., 1087
- Boon-Long, Piyawat
see Chu, Sydney C. K., 141
- Booth, John
see Crowell, Richard M., 1227
- Boothby, Thomas E.
Stability of Masonry Piers and Arches, 176
- Borden, R. Todd
The Greening of Greens, 1210
- Borden, Roy H., ed.
Grouting, Soil Improvement and Geosynthetics, 1250
- Boresi, Arthur P.
see Wang, Dong Q., 233
- Borgman, Leon E.
see Scheffner, Norman W., 1100
- Borja, Ronaldo I.
Free Boundary, Fluid Flow, and Seepage Forces in Excavations, 375
Generalized Creep and Stress Relaxation Model for Clays, 462
- Borthwick, A. G. L.
Laboratory Study of Oil Slick Subjected to Nearshore Circulation, 362
- Bos, M. G.
see Clemmens, A. J., 616
- Bosch, Harold
see Namini, Ahmad, 843

- Bosco, C.
Softening and Snap-Through Behavior of Reinforced Elements, 246
- Botha, Jan L.
Flow Rates at Signalized Intersections Under Cold Winter Conditions, 996
- Boulanger, Ross W., ed.
see Seed, Raymond B., ed., 1270
- Bouwer, Herman
Reuse Rules, 1183
- Bowen, David R.
see Moutal, Harvey P., 1136
- Boyer, Robert E., ed.
International Air Transportation: A New International Airport, 1256
- Bradford, Mark Andrew
Analysis of Circular RC Columns for Short- and Long-Term Deformations, 793
Composite Beams with Partial Interaction under Sustained Loads, 862
Distortional Buckling Solutions for Continuous Composite Beams, 761
- Brand, Alfred H.
Gabions and Geogrids, 1201
- Brandon, J. A.
see Cremona, C. F., 45
- Bratkovich, Alan
see Washburn, Libe, 478
- Breen, John E.
see Roberts, Carin L., 1217
- Bretscher, Ulrich
Improvement of Flow in Final Settling Tanks, 325
- Briassoulis, Demetres
Integrated Physical Model for Cylindrical Shells, 878
- Brickell, J. L.
Military Leaders and Civil Engineers—An Air Force Academy Challenge, 742
- Bridge, John S.
see van Niekerk, Andre, 483
see Vogel, Koen R., 484
- Briggs, M. J.
see Elgar, Steve, 1083
- Brill, E. Downey, Jr.
see Lee, Han-Lin, 1047
see Uber, James G., 1053
- Brincker, Rune
see Jensen, Jakob Laigaard, 228
- Brisbane, Thomas E.
see Abt, Steven R., 570
- Brüchner, J.
R&D Cooperation by Swedish Contractors, 89
- Brock, W. Gary
see Hauser, Gary E., 1163
- Broeren, Sally M.
see Singh, Krishan P., 1073

- Brouwer, Robert**
see Schuurmans, Wytze, 597
- Brown, Colin B.**
see Boothby, Thomas E., 176
- Brown, Dan A.**
 Geotechnical Investigation Strategies for Lunar Base, 29
- Bruch, J. C., Jr.**
see Sloss, J. M., 24
- Bruell, Clifford J.**
 Electroosmotic Removal of Gasoline Hydrocarbons and TCE From Clay, 310
see Segall, Burton A., 311
- Brune, David**
see Yantarasri, Thongchai, 341
- Bruneau, Michel**
 Evaluation of System-Reliability Methods for Cable-Stayed Bridge Design, 820
- Bruton, Jon C.**
see Kraft, Leland M., Jr., 452
- Bryant, B. D.**
see Brickell, J. L., 742
- Bubbers, Geoffrey**
 Hypertext and Claim Analysis, 133
- Bubshait, Abdulaziz A.**
 Owner Involvement in Construction Projects in Saudi Arabia, 655
- Bucher, Christian G.**
see Wall, Friedrich J., 300
see Wall, Friedrich J., 301
- Buckle, Gregory**
see Duplancic, Neno, 1192
- Buckle, Ian G.**
see Mayes, Ronald L., 772
- Budhu, M.**
see Neelakantan, G., 410
- Budiman, Jeff S.**
 Constitutive Behavior of Stress-Induced Anisotropic Cohesive Soil, 440
- Budkowska, B. B.**
 Sensitivity Analysis of Thin-Walled I-Beams Resting on Elastic Foundation, 226
- Bühler, J.**
 Source Control of Intrusions Along Horizontal Boundary, 495
- Bullock, Darcy**
 Advanced Software Design and Standards for Traffic Signal Control, 995
- Bullock, Darcy M.**
 Object-Oriented Programming in Robotics Research for Excavation, 80
- Burati, James L., Jr.**
 Causes of Quality Deviations in Design and Construction, 91
 Quality Management Organizations and Techniques, 96
- Burchell, A. J.**
see Hulme, T. W., 112
- Burman, R. D., ed.**
see Jensen, M. E., ed., 2
- Burn, Donald H.**
 Comparison of Optimization Formulations for Waste-Load Allocations, 343
see Lence, Barbara J., 1061
- Burns, F.**
see Janardhanam, R., 690
- Burns, Frank**
see Peindl, Richard D., 389
see Peindl, Richard D., 390
- Burns, Jack O.**
see Johnson, Stewart W., 38
- Burris, David**
see Hatfield, Kirk, 326
- Burton, W. Scott**
see Noor, Ahmed K., 195
- Burtraw, Dallas**
 Equity and International Agreements for CO₂ Containment, 147
- Button, Martin R.**
 Out-of-Plane Seismic Response of Reinforced Masonry Walls, 896
- Buyukozturk, Oral**
see Lee, Kwang Myong, 276
- Bysveen, Steinar**
see Ronold, Knut O., 386
- Cabrera, Enrique**
 Influence of Liquid Length Variation in Hydraulic Transients, 566
- Cakmak, Ahmet**
see Nigbor, Robert, 1216
- Call, Russell D.**
 Wood Connections with Heavy Bolts and Steel Plates, 4
- Campo, Juan J.**
see Moore, Gordon H., 1208
- Cannon, M. E.**
 Integrated GPS-INS for High-Accuracy Road Positioning, 965
- Carlevaro, Fabrizio**
 Engineering-Econometric Model of Energy Demand, 146
- Carlton, Gary M.**
see Ngo, Chien D., 1189
- Carney, J. F., III.**
see Hahn, G. D., 288
- Carpinteri, A.**
see Bosco, C., 246
- Carrier, J. Daniel**
 Managing and Motivating People on a Joint Venture Project, 668

- Carrigan, Kevin**
see Summerell, B. Ray, 1169
- Carrijo, Osmar A.**
 Precision of Evapotranspiration Estimates Using Neutron Probe, 638
- Carroll, J. J.**
see Dong, A., 604
- Carter, John P.**
 Analysis of Laterally Loaded Shafts in Rock, 408
- Casey, James J., Jr.**
see Russell, Jeffrey S., 663
- Castillo, Enrique**
 Engineering Analysis of Extreme Value Data: Selection of Models, 1086
- Castro, Gonzalo**
 Steady-State Strength Analysis of Lower San Fernando Dam Slide, 387
- Catapano, Fred**
 Principles of Holistic Medicine Applied to Infrastructure Maintenance: A Test Case, 1126
- Celebi, M.**
 Seismic Response of Pacific Park Plaza. I: Data and Preliminary Analysis, 845
see Şafak, E., 846
- Celikkol, Barbaros**
see Swift, M. Robinson, 1114
- Cesare, Mark A.**
 Modeling Bridge Deterioration with Markov Chains, 1020
- Chaallal, Omar**
 Finite Element Model for Seismic RC Coupled Walls Having Slender Coupling Beams, 921
- Chacko, Baby**
 Effect of Thickness Distribution on Performance of S-Cambered Profiles, 150
- Chai, Jin-Chun**
see Bergado, Dennes T., 421
- Chaiseri, Piyawat**
see Fujino, Yozo, 275
- Chakrabarty, B. K.**
 Model for Optimal Design of Reinforced Concrete Beam, 940
- Chameau, J.-L.**
see Thevanayagam, S., 201
- Chan, H. C.**
 Crack Analysis of Reinforced Concrete Tension Members, 875
- Chandrakeerthy, Sammu R.**
see Hamid, Ahmad A., 950
- Chang, Ching S.**
 Discrete Element Method for Slope Stability Analysis, 468
 Elastoplastic Deformation for Particulates with Frictional Contacts, 254
 Micromechanics Modeling for Stress-Strain Behavior of Granular Soils. I: Theory, 472
- Chang, Jing-Tang**
see Shiau, Le-Chung, 47
- Chang, K. C.**
 Effect of Ambient Temperature on Viscoelastically Damped Structure, 867
see Yao, G. C., 271
- Chang, Luh-Maan**
 Trend in Local Area Network Utilization, 646
- Chang, Peter**
see Bernold, Leonhard E., 104
- Chang, Shih Toh**
 Prestress Influence on Shear-Lag Effect in Continuous Box-Girder Bridge, 932
- Chang, Shou-young**
see Yen, Chin-lien, 567
- Chang, Tzzy-Shiou**
 Effect of Particle Contact Bond on Shear Modulus, 430
- Chang, Yang**
see Chang, Ching S., 472
see Chang, Ching S., 473
- Chao, H. I.**
see Huang, L. H., 1106
- Chao, Li-Chung**
see Chang, Luh-Maan, 646
see Skibniewski, Mirosław J., 124
- Chapman, Raymond S.**
see Dortch, Mark S., 516
- Charbeneau, Randall J.**
see Loaiciga, Hugo A., 477
- Charlie, Wayne A.**
 Time-Dependent Cone Penetration Resistance Due to Blasting, 429
- Chase, Gerald W.**
 Implementation of TQM in Building Design and Construction, 665
- Chasten, Cameron P.**
 Prying and Shear in End-Plate Connection Design, 831
- Chaturvedi, Mahesh C.**
 Irrigation and Drainage—Systems Policy Analysis and India Case Study, 1064
- Chau, K. W.**
 User-Friendly PC-Based Design Package for Gravity-Type Seawalls, 1097
- Chau, Kwok-Wing**
 Resolving Construction Disputes by Mediation: Hong Kong Experience, 671
- Chaudhry, Fazal H.**
 Calculating Flow in Manifold and Orifice System, 342
- Chaudhry, M. Hanif**
see Jiménez, Oscar F., 151

- Chaudhuri, Reaz A.**
see Kabir, Humayun R. H., 239
- Chávez-Morales, Jesús**
 Planning Simulation Model of Irrigation District, 576
- Chaze, Jean-Paul**
see Carlevaro, Fabrizio, 146
- Chen, Cheng-lung**
 Momentum and Energy Coefficients Based on Power-Law Velocity Profile, 563
- Chen, Chun-Sung**
 Solving Circular Curve Using Newton-Raphson's Method, 959
- Chen, D.**
 Torsional Stresses in Tubular Lap Joints with Tapered Adherends, 272
- Chen, G.**
 Power Flow and Energy in Primary-Secondary Systems, 215
see Bild, S., 868
- Chen, H. F.**
 Designing Articulated Vehicles for Low-Speed Maneuverability, 1014
- Chen, Hsiao-Lian**
see Nogami, Toyooki, 373
- Chen, Ming-Sue**
see Washburn, Libe, 478
- Chen, W. F.**
see King, W. S., 779
- Chen, Yu**
 Wind Effects on Base-Isolated Structures, 255
- Cheng, Ke S.**
 Rainfall Area Identification Using GOES Satellite Data, 584
- Cheng, Ralph, ed.**
see Spaulding, Malcolm L., ed., 1247
- Cheng, S.**
see Chen, D., 272
- Cheong, Hee Kiat**
see Pan, Tso-Chien, 711
see Pan, Tso-Chien, 715
- Chern, S. P.**
see Shahrooz, B. M., 895
- Cheung, Kwok Fai**
see Isaacson, Michael, 1109
- Cheung, Y. K.**
see Chan, H. C., 875
- Chien, E. Y. L.**
see Ahmad, M., 939
- Chiew, Yee-Meng**
 Effect of Spoilers on Scour at Submarine Pipelines, 546
 Frictional Resistance of Overland Flow on Tropical Turfed Slope, 481
 Scour Protection at Bridge Piers, 542
- Chiu, Chao-Lin**
 Variation of Velocity Distribution along Nonuniform Open-Channel Flow, 525
- Cho, Soon Ho**
 Slab Behavior in Composite Beams at Openings. I: Analysis, 884
 Slab Behavior in Composite Beams at Openings. II: Tests and Verification, 885
- Choi, Chang-Koon**
 Simplified Building Analysis with Sequential Dead Loads—CFM, 809
 Transition Plate-Bending Elements for Compatible Mesh Gradation, 181
- Choong, Kok Keong**
see Fujii, Fumio, 247
- Choudhari, Nilay**
 BOD Test for Tropical Countries, 324
- Chow, C. K.**
 Hong Kong Port Facilities, Airport, and Housing Require New Concepts, 755
 Many Engineering Issues and Challenges Met in Development of Hong Kong, 731
 Transportation for Hong Kong Requires Solutions to Issues and Problems, 748
- Chow, Phillip Y.**
 Construction of Pressurized, Self-Supporting Membrane Structure on Moon, 34
- Chow, Y. K.**
 Dynamic Compaction Analysis, 425
see Quek, S. T., 403
- Choy, Fred**
see Liang, Robert Y., 177
see Liang, Robert Y., 240
- Christensen, F. T.**
 Ice Loads on Vertical Bridge Pier at Two Different Model Scales, 55
- Christian, John**
see Bubbers, Geoffrey, 133
- Christiansen, Dennis**
see Turnbull, Katherine F., 1204
- Christiansen, Niels**
see Sumer, B. Mutlu, 1078
- Christoforou, Chris**
see Thornton, Charles H., 1131
- Chu, J.**
 Strain-Softening Behavior of Granular Soil in Strain-Path Testing, 377
- Chu, S. T.**
 Constant Hole-Spacing Trail Tubes, 583
- Chu, Shu-Tung**
 Vadose Zone Composite Hydraulic Conductivity, 629
- Chu, Sydney C. K.**
 Design Optimization of Passively Cooled Room, 141
- Chua, K. H.**
 Stochastic Model for Pavement Design, 1017

- Chua, Koon Meng
see Johnson, Stewart W., 38
see Yuan, Zehong, 435
- Chuang, Poon-Hwei
 Elastic Analysis of Submarine Pipelines, 762
 Stability Analysis in Geomechanics by Linear Programming. I: Formulation, 458
 Stability Analysis in Geomechanics by Linear Programming. II: Application, 459
- Chung, Choong-Ki
see Finno, Richard J., 454
- Chung, Francis I.
see Andrews, Elizabeth S., 1038
see Hutton, Paul H., 1067
see Hutton, Paul H., 1068
- Chung, Hye-Kyo
see Choi, Chang-Koon, 809
- Chwang, Allen T.
see Yang, Shih-An, 198
- Clapp, James L.
see Adams, Teresa M., 1025
- Clark, S. J.
see Hjelmstad, K. D., 769
- Clemmens, A. J.
 Bayesian Inference for Feedback Control. I: Theory, 600
 Bayesian Inference for Feedback Control. II: Surface Irrigation Example, 601
 Critical Depth Relations for Flow Measurement Design, 616
 Feedback Control of Basin-Irrigation System, 605
- Cleveland, A. B., Jr.
see Morad, A. A., 66
- Cliff, R. C.
 Gas Phase Control for Oxygen-Activated Sludge, 330
- Clough, G. Wayne
see Leca, Eric, 394
- Coad, R. M.
see Weaver, Ken, 1165
- Cofer, William F.
 Analysis of Welded Tubular Connections Using Continuum Damage Mechanics, 803
- Cohen, Julie Mark
 Elastic Buckling Coefficients for Long, Unstiffened Plates, 305
 Research Needs Related to Forensic Engineering of Constructed Facilities, 704
- Cohn, M. Z.
 Yield Safety, Cracking Control, and Moment Redistribution, 781
- Coleman, Gregory B.
see Kline, Donald H., 645
- Collyard, Cynthia S.
see Tavakoli, Amir, 738
- Colquhoun, I. R.
see Teskey, W. F., 957
- Comi, C.
 Dynamic Analysis of Elastoplastic Softening Discretized Structures, 297
- Committee on Design of Steel Building Structures of the Committee on Metals, Structural Division
 Compendium of Design Office Problems, 954
- Committee on Employment Conditions and Professional Activities Staff
 ASCE 1991 Salary Survey: Summary of Findings, 739
- Conci, Aura
 Stiffness Matrix for Nonlinear Analysis of Thin-Walled Frames, 265
- Constantinou, M. C.
see Juhn, G., 880
- Constantinou, Michalakis C.
see Nagarajaiah, Satish, 851
- Cook, Christopher
see Abt, Steven R., 514
- Cook, Ronald A.
 Ductile Multiple-Anchor Steel-to-Concrete Connections, 850
- Corigliano, A.
see Comi, C., 297
- Corkum, Brent T.
see Ting, John M., 67
- Corley, W. Gene
see Cohen, Julie Mark, 704
- Cornell, C. A.
see Karamchandani, A., 806
see Karamchandani, A., 807
- Cornwell, D. A.
see Wang, M. C., 358
- Corotis, Ross B.
see Islam, M. Saiful, 768
- Correia, Luis R.P.
 Fully Coupled Unsteady Mobile Boundary Flow Model (FCM), 497
- Costa, Joseph
see Monahan, Rosemary, 1142
- Costello, George A.
see Paris, Anthony J., 270
- Couillard, D.
 Metallurgical Residue for Solubilization of Metals from Sewage Sludge, 355
- Couse, Joel R.
 Diesel as Case of Consumer Choice in Alternative Transport Fuels, 145
- Cox, Anthony L., Jr.
 Dealing with Uncertainty: From Health-Risk Assessment to Environmental Decision Making, 144
- Coyle, Michael
see Sanvido, Victor, 95
- Crandall, Keith C.
see Oloufa, Amr A., 69

- Cremona, C. F.**
Modal Identification Algorithm with Unmeasured Input, 45
- Croll, James G. A.**
see Gonçalves, Paulo B., 811
- Crowell, Richard M.**
Mining for Building Expansion, 1227
- Crowther, G. Scott**
Estimating Thaw-Strain Settlement of Frozen Fill, 59
- Cruz, Evarett, Jr.**
Manholes and Microtunneling, 1228
- Cuenca, Richard H.**
see Carrijo, Osmar A., 638
see Katul, Gabriel G., 613
- Cullinane, M. John**
Optimization-Availability-Based Design of Water-Distribution Networks, 494
- Cuomo, Daniel A.**
Investigation of L'Ambiance Plaza Building Collapse, 720
- Cushman, Nancy S.**
Technology Transfer in Building Construction—Case of Seismic Design, 97
- Cywiński, Zbigniew**
Howe Truss Behavior Interpreted by Deflections, 716
- Czompo, J.**
see Gao, Y., 958
- Dahab, Mohamed F.**
see Lee, Yong W., 1045
- Dai, Dingzhong**
Research/Application of System Engineering to Water Resources Systems, 1057
- Dakoulas, Panos**
Fine Ottawa Sand: Experimental Behavior and Theoretical Predictions, 469
- Dalane, J. I.**
see Karamchandani, A., 794
- Dall'Asta, Andrea**
Design of RC Sections with Generic Shape under Biaxial Bending, 822
- Dalrymple, Robert A.**
Prediction of Storm/Normal Beach Profiles, 1090
- Dan, Paul**
see Hancu, Simion, 565
- Daniel, David E.**
see Estornell, Paula, 453
see Kim, Woon-Hyung, 423
see Koerner, Robert M., 1160
- Danielians, A.**
see Yang, J. N., 237
see Yang, J. N., 238
- Daoud, Osama E. K.**
Defects in Aluminum Windows and Impact on Dust and Air Infiltration, 705
- Darby, Jeannie L.**
see Williams, Mary E., 367
- Darzi, Kent**
see Schonberg, William P., 43
- Das, V. C.**
see Vallabhan, C. V. Girija, 677
- Dascal, Oscar**
see Lefebvre, Guy, 445
- Davalos-Sotelo, R.**
Bolted Connections in Wood under Bending/Tension Loading, 813
- Davies, Gwynne**
see Platt, John, 182
- Davies, J. M.**
see Graham, D. I., 543
- Davies, Michael**
see Scott, P. J. B., 1161
- Davies, Michael P.**
see Harper, Thomas G., 1232
- Davinroy, Thomas B.**
see Mason, John M., Jr., 985
- Davis, Robert O.**
see Banerjee, Sunirmal, 411
- Day, G. N.**
see Smith, J. A., 1041
- Day, Robert W.**
Damage of Entryway Stairs due to Settlement of Gravel Backfill, 714
- Damage to Two Apartment Buildings Due to Moisture Variation of Expansive Soil, 718**
- Depositions and Trial Testimony, A Positive Experience?, 735**
- Effective Cohesion for Compacted Clay, 397**
- Fill-Slope Failure and Repair, 717**
- Irrigation, Drainage, and Landscaping for Expansive Soil, 592**
- Moisture Migration Through Concrete Floor Slabs, 707**
- Swell versus Saturation for Compacted Clay, 436**
- Walking of Flatwork on Expansive Soils, 708**
- de Beer, J.**
Water-Balance Model of Two Conservancies in Guyana, 606
- de Béjar, Luis A.**
Risk Consistent Estimate of Heat-Straightening Applications. I: Plates, 951
Risk Consistent Estimate of Heat-Straightening Applications. II: Beams, 952
- de Buen, Oscar**
Column Design in Steel Frames under Gravity Loads, 920
- De La Garza, Jesus M.**
Flavors and Mixins of Expert Systems Technology Transfer Model for AEC Industry, 116
- see* Vorster, Michael C., 13
- De Paola, Edward M.**
see Berger, Horst, 1215

- de Silva, Suraj
see Loganathan, N., 396
- Dean, R. G.
 Beach-Nourishment Performance Predictions, 1113
- Degoutte, G.
see Peyras, L., 507
- Deierlein, Gregory G.
see Ziemian, Ronald D., 898
see Ziemian, Ronald D., 899
- Deininger, Rolf A.
see Lee, Byoung Ho, 306
- Delleur, Jacques W.
see Karamouz, Mohammad, 1040
- Delo, E. A.
see Graham, D. I., 543
- Dempsey, B. A.
see Wang, M. C., 358
- DeNatale, Jay S.
 Total Stress Analysis of Cantilever Sheetpiling in Layered Clay, 422
- Deng, Yueying
 Predictions of Thermal Characteristics for Mixed Porous Media, 685
- Denning, James
 Automating The Corps, 1156
 Design-Build Goes Public, 1184
 Expert Systems: Ready to Hit the Road?, 1174
- Denton, Richard A.
see Alavian, Vahid, 557
- Der Kiureghian, A.
see Chua, K. H., 1017
- Desai, C. S.
see Navayogarah, N., 212
see Sharma, K. G., 302
- Desai, Chandra S.
 Behavior of Compacted Lunar Simulants Using New Vacuum Triaxial Device, 44
- Deskovic, Nikola
see Triantafillou, Thanasis C., 829
- DeVries, Jack W.
see Bailard, James A., 1081
- Devulapalli, Ravikumar S.
see Bhaskar, Nageshwar R., 1066
- Dezi, Luigino
see Dall'Asta, Andrea, 822
see Tarantino, Angelo Marcello, 872
- Dhillon, Surjit S.
 Time-Delay Effect on Dynamic Response of Actively Controlled Structures, 46
- Dhir, Vijay K.
see Lingineni, Suresh, 314
- Dhowian, Abdulmohsin W.
 Soil Suction-Potential Model, 392
- Dia, Amadou
see Reddy, J. Mohan, 632
- Díaz-Rodríguez, J. A.
 Yielding of Mexico City Clay and Other Natural Clays, 417
- Dick, Richard D.
 Use of Explosives on the Moon, 19
see Goodings, Deborah J., 18
- Dick, Richard I.
see Wells, Scott A., 257
- Dickey, T. D.
see Washburn, Libe, 478
- Diekmann, James E.
 Site Event Advisor: Expert System for Contract Claims, 86
 SuperChange: Expert System for Analysis of Changes Claims, 114
- Diemand, Deborah
 Winter Operability: Equipment Problems and Their Remedies, 57
- Dilger, W. H.
 Method Proposed for Construction of Multispan Cable-Stayed Bridges, 106
- Dill, Robin B.
see Crosswell, Richard M., 1227
- Dingemans, Maarten W.
see Sobey, Rodney J., 1105
- Diplas, Panayiotis
 Hydraulic Geometry of Threshold Channels, 503
 Properties of Various Sediment Sampling Procedures, 523
- Dishongh, Burl E.
 Residual Deformation Analysis for Inelastic Bridge Rating, 842
- Divakar, M. P.
 Micromechanics-Based Constitutive Model for Interface Shear, 231
- Dixit, S. S.
see Morad, A. A., 66
- Dodds, Peter J.
 The Evolution of an Environmental Monitor, 1170
- Doehring, Donald O.
see Charlie, Wayne A., 429
- Dolan, J. D.
 Design Considerations for Using Adhesives in Shear Walls, 956
- Dolly, Matthew O.
see Siller, Thomas J., 464
- Dong, A.
 Estimation of Daytime Net Radiation Over Well-Watered Grass, 604
- Dongol, D. M.
see Melville, Bruce W., 545
- Donnelly, Robert A.
see Kikuchi, Shinya, 993

- Dorf, Wendy
see Moutal, Harvey P., 1136
- Dortch, Mark S.
 Application of Three-Dimensional Lagrangian Residual Transport, 516
- Douglass, Scott L.
 Estimating Extreme Values of Run-Up on Beaches, 1094
- Dowding, C. H.
see Linehan, P. W., 383
- Drake, Richard M.
 Concept Evaluation Methodology for Extraterrestrial Habitats, 35
see Hines, James M., 32
- Driscoll, Charles T.
see Tsay, Ting-Kuei, 493
- Driscoll, George C.
see Chasten, Cameron P., 831
- Droste, R. L.
 Effect of Nitrogen on Yield Using Bioenergetics Theory, 356
- Druss, David L.
 The Heartbeat of the Artery, 1120
- Duggal, Arun S.
see Niedzwecki, John M., 1116
- Duplancic, Neno
 Taming Environmental Data, 1192
- Durgunoglu, Ali
see Singh, Krishan P., 1073
see Singh, Krishan P., 1213
- Dussault, Serge
see Léger, Pierre, 828
- Duthinh, Dat
 Pressure of Crushed Ice as Mohr-Coulomb Material Against Flat, Axisymmetric Indentor, 58
- Duttenhoeffer, Richard
 Cost and Quality Management, 654
- Dux, Peter F.
see Muller, John F., 776
- Dwarakanath, H. V.
 Deformational Behavior of Fiber-Reinforced Concrete Beams in Bending, 906
- Dwyer, John P.
 California's Tradable Emissions Policy and Greenhouse Gas Control, 143
- Easa, Said M.
 Estimating Earthwork Volumes of Curved Roadways: Mathematical Model, 1021
 Exact Minimum Sight Distance on Sag Curve with Centered Overpass, 1006
 Probabilistic Design of Open Drainage Channels, 633
- Easson, W. J.
see Griffiths, M. W., 1098
- Easterling, W. Samuel
 Strength of Composite Slabs, 889
- Eaton, Robert A., ed.
see Janoo, Vincent C., ed., 1267
- Ebrahimpour, A.
 Design Live Loads for Coherent Crowd Harmonic Movements, 821
- Eckmann, Donald E.
 Turning on the Waterworks, 1190
- Edgar, Thomas V.
see Swift, Daniel P., 52
- Edil, Tuncer B.
 Interaction of Inorganic Leachate with Compacted Pozzolanic Fly Ash, 444
see Fox, Patrick J., 434
- Effler, Steven W.
see Tsay, Ting-Kuei, 493
- Elahi, S. Manzur
 Traffic Signal Using Mixed Controller Operations, 1023
- El-Bkaily, Marwan
 Load Shortening in Plastic Buckling of Cylinders, 267
- Eldin, Neil N.
 Use of Scrap Tires in Road Construction, 123
- Elgamal, A.-W.
 Three-Dimensional Seismic Analysis of La Villita Dam, 471
- Elgar, Steve
 Laboratory Simulations of Directionally Spread Shoaling Waves, 1083
- Elgharib, Hesham M.
see Kançari, Roozbeh, 111
- El-Hakim, Omnia
 Velocity Distribution Inside and Above Branched Flexible Roughness, 636
- El-Jabi, N.
 Stage-Discharge Relationship in Tidal Rivers, 1088
- Ellingwood, Bruce
see Islam, M. Saiful, 768
see Rosowsky, David, 702
- Ellis, Ralph
see Herbsman, Zohar, 98
- El-Marsafawi, H.
 Dynamic Experiments on Two Pile Groups, 395
- Elms, D. G.
see Richards, R., Jr., 418
- Elnawawy, Omar A.
see Hamid, Ahmad A., 950
- El-Sheikh, A. I.
see McConnel, R. E., 810
- Elsworth, Derek
 Flow-Deformation Response of Dual-Porosity Media, 374
- Engelhardt, M. D.
 Experimental Performance of Long Links in Eccentrically Braced Frames, 929

- Englehardt, James D.
Information Theory in Risk Analysis, 361
- English, Deborah
Coal-Gas Conundrum, 1140
- Engman, Ted, ed.
Irrigation and Drainage: Saving a Threatened Resource—In Search of Solutions, 1257
- Enriquez, Apollo S.
see Bergado, Dennes T., 419
- Epps, James W.
Computerized Solution for Signalized Intersection Service Volumes, 1000
- Ermolin, Yuri A.
Automated Operation of Pumping Stations in Russia, 610
Study of Open-Channel Dynamics as Controlled Process, 479
- Ersoy, Ugur
see Altin, Sinan, 876
- Espana, Carlos
see Federle, Mark O., 657
- Espino, Reynaldo
see Oloufa, Amr A., 64
- Esrig, Melvin I.
see Leznicki, Jacek K., 416
- Estornell, Paula
Hydraulic Conductivity of Three Geosynthetic Clay Liners, 453
- Ethier, C. Ross
see Ackerman, Josef Daniel, 349
- Ettounay, M.
see Benaroya, H., 33
- Ettounay, Mohammed
Cable Structures and Lunar Environment, 36
see Benaroya, Haym, 28
- Ettounay, Mohammed M.
Regolith Mechanics, Dynamics, and Foundations, 30
- Evans, Mark D.
Density Changes During Undrained Loading—Membrane Compliance, 470
Membrane Compliance and Liquefaction of Sluiced Gravel Specimens, 409
- Everett, Jess W.
see Jacobs, Timothy L., 332
- Everett, Lorne G.
see Loaiciga, Hugo A., 477
- Evt, Sunil K.
Representing Building Product Information Using Hypermedia, 60
- Ewing, Loyd K.
see Mohamoud, Y., 593
- Ezeldin, A. Samer
Normal- and High-Strength Fiber-Reinforced Concrete under Compression, 702
- Fafitis, A.
see Divakar, M. P., 231
- Fafitis, Apostolos
see Hsu, Sheng-Yung, 894
- Fahey, Michael G.
see Bell, Larry S., 31
- Faig, W.
Photogrammetric Solution for Vehicle-Damage Investigation, 1022
- Fairweather, Virginia
The Environment is Good Business in France, 1145
L'Ambiance Plaza: What Have We Learned, 1127
- Fan, Jiahua
Reservoir Sedimentation. I: Delta and Density Current Deposits, 490
Reservoir Sedimentation. II: Reservoir Desiltation and Long-Term Storage Capacity, 491
- Fan, Jiarang
Analytical Solutions for Thick, Doubly Curved, Laminated Shells, 232
- Fan, S. C.
New Spline Finite Element for Plate Bending, 216
- Fanjiang, Guang-Nan
Tunnel Takes Cathodic Protection, 1220
- Fardis, Michael N.
see Karantoni, Fillitsa V., 858
see Karantoni, Fillitsa V., 863
- Farid, Foad
see Kangari, Roozbeh, 111
- Farrar, P.
see Westerink, J. J., 551
- Farrington, Jodi J.
see Burati, James L., Jr., 91
- Farsa, Jalaaladdin
see Kukreti, Anant R., 225
- Fazio, P.
see Hussein, R., 48
- Fazio, Paul
see Moselhi, Osama, 134
- Federle, Mark O.
Educational Needs of Civil Engineers in Management, 657
Substitutes for Leadership and Unionized Construction Carpenters, 110
see Chase, Gerald W., 665
- Fedler, Clifford B.
see Deng, Yueying, 685
- Feldman, Arlen D.
Systems Analysis Applications at Hydrologic Engineering Center, 1051
- Fell, Robin
see Swarbrick, Gareth E., 393
- Feng, T. W.
see Mesri, G., 12
- Fenton, Gordon A.
Simulation-Based Excursion Statistics, 220

- Fenves, Gregory L.**
Effect of Contraction Joints on Earthquake Response of Arch Dam, 816
- Fenves, Steven J.**
see Sanvido, Victor E., 745
- Ferrari, Mauro**
Thermal Stresses in Bi-Coated Structures, 269
- Ferro, Vito**
Flow Measurement with Rectangular Free Overfall, 639
- Fertis, Demeter G.**
Inelastic Response of Variable Stiffness Members under Cyclic Loading, 236
- Feyen, Jan**
see Liu, Fubo, 619
- Fiedler, Jerome**
Orthometric Heights from Global Positioning System, 962
- Figuerola, J. Ludwig**
see Tavakoli, Amir, 984
- Fillos, John**
see Ahmed, Shabbir, 487
- Finch, Ralph**
Coarse-Grain Parallel Computing Using ISIS Tool Kit, 73
- Findler, Nicholas V.**
Distributed Approach to Optimized Control of Street Traffic Signals, 974
- Finn, W. D. Liam**
see Yogendrakumar, Muthucumarasamy, 426
- Finney, Brad A.**
Quasi-Three-Dimensional Optimization Model of Jakarta Basin, 1037
see Matsukawa, Joy, 1043
- Finno, Richard J.**
Stress-Strain-Strength Responses of Compressible Chicago Glacial Clays, 454
- Fiorotto, Virgilio**
Fluctuating Uplift and Lining Design in Spillway Stilling Basins, 502
- Firmage, D. Allan**
see Kou, Chang-Huan, 918
- Fischer, Gary W.**
Nonmonetary Incentives: It Can Be Done, 647
- Fitzpatrick, Kay**
see Mason, John M., Jr., 985
- Fluzat, Abbas A.**
Comparative Survey of Four Unsaturated Soil Flow Equations, 512
- Flewelling, J. W.**
see McCarthy, E. J., 589
- Flick, Loren D.**
Minipile Milestone in Memphis, 1196
- Fogg, Graham E.**
see Loaiciga, Hugo A., 477
- Foliente, Greg C.**
Design of Notched Wood Beams, 891
- Fonselius, Mikael**
Determination of Fracture Toughness for Wood, 853
see Riipola, Kirsti, 854
- Fontane, Darrell G.**
see Mizyed, Numan R., 1060
- Forde, M. C.**
see McCavitt, N., 1003
- Fourney, William L.**
see Dick, Richard D., 19
see Goodings, Deborah J., 18
- Foutch, Douglas A.**
see Schiff, Scott D., 7
- Fox, Patrick J.**
 C_0/C_c Concept Applied to Compression of Peat, 434
- Fragaszy, Richard J.**
Modeling Strength of Sandy Gravel, 413
see Lawton, Evert C., 442
- François, D.**
see Alliche, A., 287
- Frank, James E.**
see Nelson, Arthur C., 1028
- Francisco, V. D.**
see Morad, A. A., 66
- Frantz, Gregory C.**
see Rashid, Rosmadi Abdul, 698
see Triano, James R., 699
- Fraser, John S.**
see Bishop, Walter A., Jr., 1212
- Frater, George S.**
Weldment Design for RHS Truss Connections. I: Applications, 912
Weldment Design for RHS Truss Connections. II: Experimentation, 913
- Frauenhoffer, John**
Masonry Wall and Window System Leakage Investigation for University Building, 712
- Frawley, Dorothy D.**
see Siller, Thomas J., 463
- Frederick, Gerald R.**
see Tarhini, Kassim M., 830
- Fredsee, Jørgen**
see Sumer, B. Mutlu, 1078
- Freilich, M. H.**
see Elgar, Steve, 1083
- French, Richard H.**
Design of Flood Protection for Transportation Alignments on Alluvial Fans, 595
Preferred Directions of Flow on Alluvial Fans, 526
- Frey, H. Christopher**
Evaluation Method for Advanced Acid Rain Compliance Technology, 142
- Freyermuth, Clifford L.**
Building Better Bridges: Concrete Vs. Steel, 1182

- Frick, David M.
see Abt, Steven R., 570
- Fridley, Kenneth J.
 Creep Behavior Model for Structural Lumber, 883
 Hygrothermal Effects on Load-Duration Behavior of Structural Lumber, 815
 Hygrothermal Effects on Mechanical Properties of Lumber, 787
 Load-Duration Effects in Structural Lumber: Strain Energy Approach, 888
see Rosowsky, David V., 955
- Fripp, Jon B.
see Diplax, Panayiotis, 523
- Frostig, Y.
 High-Order Theory for Sandwich-Beam Behavior with Transversely Flexible Core, 214
- Frydman, Sam
 Development of Strain During Monotonic Shear of Soft Clay, 402
- Fugazza, M.
 Hydraulic Design of Perforated Breakwaters, 1077
- Fugler, Mark D.
see Stalnaker, Judith J., 814
- Fujii, Fumio
 Branch Switching in Bifurcation of Structures, 247
- Fujino, Yoza
 Tuned Liquid Damper (TLD) for Suppressing Horizontal Motion of Structures, 275
- Fukumoto, Yuhshi
see Migita, Yasuhiro, 904
- Fwa, T. F.
 Geometric Characterization of Road Humps for Speed-Control Design, 1007
 Quantification of Agency and User Values of Pavement Performance, 973
- Fwa, Tien F.
 Pavement Performance and Life-Cycle Cost Analysis, 1
- Gabriel, Lester H.
see Gilley, Curtiss W., 968
- Gadi, Ahmed M.
 Future Impact of Trucking Reform on Railway Revenue, 1015
- Gaibrois, Robert G.
see Leznicki, Jacek K., 416
- Galambos, T. V.
see Barker, M. G., 812
- Galambos, Theodore V.
see Dishongh, Burl E., 842
see Lin, Shin-Hua, 817
- Galdos, N. H.
see Schelling, D. R., 938
- Gale, Robert J.
see Acar, Yalcin B., 466
- Gallagher, R. H.
see Kane, J. H., 253
- Gallichand, J.
 Including Uncertainty of Hydraulic Conductivity into Drainage Design, 624
- Galperin, Boris
see Blumberg, Alan F., 534
- Gan, D. Robert
see Berthouex, P. Mac, 10
- Gan, Thian Yew
 Modeling Monsoon-Affected Rainfall of Pakistan by Point Processes, 1076
- Gandhi, P.
see Murthy, D. S. Ramachandra, 926
- Ganesan, T. P.
 Behavior of Concrete Hollow-Block Masonry Prisms under Axial Compression, 855
- Gao, Y.
 Robust Testing Procedure for Detection of Multiple Blunders, 958
- Gao, Zhi
see Bradford, Mark Andrew, 761
- Garcia, Albert, III.
see Yantarasri, Thongchai, 341
- Garcia-Navarro, P.
 1-D Open-Channel Flow Simulation Using TVD-McCormack Scheme, 550
- Garde, Ramchandra J.
see Kothiyari, Umesh C., 488
see Kothiyari, Umesh C., 532
- Gardner, N. J.
see Alexandridis, A., 873
- Garen, David C.
 Improved Techniques in Regression-Based Streamflow Volume Forecasting, 1075
- Garg, K. G.
see Saran, Swami, 467
- Garic, Gregory
see Russo, Edwin P., 941
- Garrett, J. H., Jr.
see Linkenheld, J. S., 982
- Garrett, James H.
see Songer, Anthony D., 85
- Garrett, James H., Jr.
 Object-Oriented Model of Engineering Design Standards, 78
- Gasparini, D.
see Mesarovic, S., 210
- Gasparini, D. A.
see Mesarovic, S., 206
see Mesarovic, S., 207
- Gasparotto, Renzo
 Waterfall Aeration Works, 1209
- Gates, Timothy K.
 Optimal Irrigation Delivery System Design under Uncertainty, 602
see Bakry, Mohamed F., 590

- Gatmiri, Behrouz**
Response of Cross-Anisotropic Seabed to Ocean Waves, 437
- Gattis, J. L.**
Testing Photoelectric Sensor System to Classify Vehicles, 998
- Gavin, Thomas M.**
see Kraft, Leland M., Jr., 452
- Gaweesh, Moustafa T. K.**
see van Rijn, Leo C., 569
- Gazetas, George**
see Ahmad, Shahid, 427
see Ahmad, Shahid, 428
- Ge, Hanbin**
Strength of Concrete-Filled Thin-Walled Steel Box Columns: Experiment, 927
- Genereux, John H.**
see Nelson, Arthur C., 1034
- Genereux, Michelle**
see Nelson, Arthur C., 1034
- George, G. H.**
Conversion Between Quadratic and Power Law for Non-Darcy Flow, 513
- Georgiou, Panos G.**
see Koumoussis, Vlasios K., 84
- Germanopoulos, George**
see Jowitt, Paul W., 1062
- Gerritsen, Franciscus**
see Umeyama, Motohiko, 482
- Gerstle, Walter H.**
FEM Modeling of Fictitious Crack Propagation in Concrete, 179
see Akgul, Ferhat, 16
- Ghaly, Ashraf**
see Hanna, Adel, 446
- Ghobarah, Ahmed**
Cyclic Behavior of Extended End-Plate Joints, 833
- Giambanco, F.**
Collapse Mode of Elastic-Plastic Structures, 217
- Giannelis, P.**
see Dilger, W. H., 106
- Gibson, George E., Jr.**
Integrated Data-Base Systems, 92
- Giger, M. W.**
see Shirima, L. M., 171
- Gilbert, R. Ian**
see Bradford, Mark Andrew, 793
see Bradford, Mark Andrew, 862
- Gill, Mohammad Akram**
Numerical Solution of Muskingum Equation, 515
- Gilley, Curtiss W.**
Field Test of 72-in.-Diameter Cast-in-Place Nonreinforced Concrete Pipe, 968
- Gilley, John E.**
Beginning of Motion for Selected Unanchored Residue Materials, 614
- Darcy-Weisbach Roughness Coefficients for Gravel and Cobble Surfaces, 578**
- Gilliam, J. W.**
see Konyha, K. D., 628
- Gjertsen, Knut**
see Diekmann, James E., 86
- Glavinich, Thomas E.**
Microcomputer-Based Project Management for Small Engineering Firms, 648
- Gleason, Phillip J.**
see Ahmed, Shabbir, 487
- Goel, Subhash C.**
see Aslani, Farhang, 917
- Goh, C. J.**
Optimal Linear Segmented Structures with Variable Segment Boundaries, 298
- Goldbloom, Joseph**
Improving Specifications, 1202
- Goldsworthy, Helen M.**
Energy Dissipation in Determinate Steel Beams, 757
Energy Dissipation in Indeterminate Steel Beams, 758
- Golias, John C.**
Aspects of Road-Accident Death Analyses, 986
- Gómez, Manuel Valiente**
see Martín-Benito, José María Tarjuelo, 635
- Gonçalves, Paulo B.**
Axisymmetric Buckling of Pressure-Loaded Spherical Caps, 811
- Goncalves S., Raúl**
New Stability Equation for Columns in Braced Frames, 861
- Goode, Michael G.**
Project Management Oversight—Good Tool for Program Managers, 659
- Goodings, Deborah J.**
Modeling Effects of Chemical Explosives for Excavation on Moon, 18
see Dick, Richard D., 19
- Goodno, Barry J., ed.**
Computing in Civil Engineering and Geographic Information Systems Symposium, 1239
- Goodwin, Chris E.**
see Swift, M. Robinson, 1114
- Gopalratnam, Venbakm C.**
Effect of Collector Dosage on Metal Removal by Precipitation/Flotation, 363
- Gordon, J. L.**
Hydroturbine Cavitation Erosion, 152
- Goring, Derek G.**
Propagation of Long Waves Onto Shelf, 1080

- Gorji, M.
Analysis of Thick Circular Plates Undergoing Large Deflections, 25
- Goto, Akira
see Mehta, Brijesh Kumar, 618
- Goubert, Didier
Small Utility GIS, 1223
- Goul, K. Michael
see Elahi, S. Manzur, 1023
- Gould, Phillip L.
see Ahn, Ki Jun, 277
see Ahn, Ki Jun, 278
- Goulter, I. C.
Systems Analysis in Water-Distribution Network Design: From Theory to Practice, 1050
- Graf, Walter H.
see Correia, Luis R.P., 497
- Graham, A. E. "Ted"
see Flick, Loren D., 1196
- Graham, D. I.
Measurement and Prediction of Surface Shear Stress in Annular Flume, 543
- Graham, N. J. D.
see Ojha, C. S. P., 365
- Grandinson, B.
see Bröchner, J., 89
- Grattan, S. R.
see Dong, A., 604
- Gray, Donald H.
Biotechnical Stabilization of Highway Cut Slope, 443
- Greated, C. A.
see Griffiths, M. W., 1098
- Grebet, Philippe
see Katul, Gabriel G., 613
- Gregory, James M.
see Deng, Yueying, 685
- Griffis, F. H. (Bud)
Bidding Strategy: Winning over Key Competitors, 99
- Griffis, F. H. "Bud"
ADR, TQM, Partnering, and Other Management Fantasies, 749
- Griffiths, M. W.
Measured Internal Kinematics for Shoaling Waves with Theoretical Comparisons, 1098
- Grobler, F.
see Syal, M. G., 128
- Grobler, Francois
see Sanvido, Victor, 95
- Groom, Leslie
Nonlinear Modeling of Truss-Plate Joints, 897
- Gu, Ruochuan
see Stefan, Heinz G., 328
- Guo, Yuanyu
see Dai, Dingzhong, 1057
- Gupta, Suresh K.
see Pandey, Ravi S., 599
- Gusheh, P.
see Parsanejad, S., 928
- Güvenis, Moris
see Sanvido, Victor, 95
- Guy, Louis L., Jr.
Upgrading the First Professional Degree, 750
- Guymer, I.
Longitudinal Dispersion Coefficients in Estuary, 508
- Guza, R. T.
see Elgar, Steve, 1083
- Ha, K.
see Hussein, R., 48
- Hackett, Robert M.
Modeling Stiffness Degradation in Filamentary Composite Materials, 686
- Haddock, J. E., Sr.
see White, T. D., 1018
- Hadipriono, Fabian C.
Expert System for Construction Safety. I: Fault-Tree Models, 722
Expert System for Construction Safety. II: Knowledge Base, 723
- Hagen, Øistein
Conditional and Joint Failure Surface Crossing of Stochastic Processes, 262
- Hager, Willi H.
see Bretscher, Ulrich, 325
- Hahn, Daniel M.
see Kerr, William C., 100
- Hahn, G. D.
Buckle Propagation in Submarine Pipelines, 288
- Haimes, Yacov Y., ed.
Risk-Based Decision Making in Water Resources V, 1266
- Haith, D. A.
Sludge Loading Rates for Forest Land, 317
- Hakim, M. Maher
see Garrett, James H., Jr., 78
- Haldar, Achintya
Reliability of Geometrically Nonlinear PR Frames, 285
- Hall, William J.
see Schiff, Scott D., 7
- Hallin, Jack
The Last Freeway, 1162
- Halpin, Daniel W.
see AbouRizk, Simaan M., 121
see Hijazi, Adib M., 131
- Ham, Robert K.
Partitioning of Elements by Refuse Processing, 350
- Hamid, Ahmad A.
Flexural Tensile Strength of Partially Grouted Concrete Masonry, 950

- Hamilton, J.**
Modeling and Pilot-Scale Experimental Verification for Predenitrification Process, 308
- Hammer, Victor A.**
see Ham, Robert K., 350
- Hampton, Delon**
Critical Issues for Engineering Managers, 658
- Han, Y. C.**
see El-Marsafawi, H., 395
- Hancock, Gregory J.**
see Kwon, Young B., 857
see Zhao, Xiao-Ling, 792
- Hancu, Simion**
Wave-Motion Stability in Canals with Automatic Controllers, 565
- Hanley, Richard C.**
The Connecticut Photolog Laser Videodisc-Based Pavement Rating System, 983
- Hanna, Adel**
Effects of K_0 and Overconsolidation on Uplift Capacity, 446
- Hanna, Awad S.**
Knowledge Acquisition and Development for Formwork Selection System, 101
- Hansen, D.**
see George, G. H., 513
- Hansen, Kenneth D., ed.**
Roller Compacted Concrete III, 1268
- Hanson, John M.**
see Cohen, Julie Mark, 704
- Hanson, Robert D.**
see Setareh, Mehdi, 797
see Setareh, Mehdi, 798
see Setareh, Mehdi, 799
see Xia, Chuan, 864
- Hanzawa, Tetsuya**
see Xue, Song-tao, 248
- Hara, Tatsuo**
see Takahashi, Tamotsu, 558
- Harajli, M. H.**
Service Load Behavior of Concrete Members Prestressed with Unbonded Tendons, 900
- Hargens, Dean**
see English, Deborah, 1140
- Harichandran, Ronald S.**
Random Vibration under Propagating Excitation: Closed-Form Solutions, 188
- Harik, Issam E.**
see Jianping, Pei, 937
- Harmon, Thomas C.**
Simulating Solute Transport Using Laboratory-Based Sorption Parameters, 347
- Harms, Willard D., Jr.**
Softening by Fluidized Bed Crystallizers, 338
- Haroun, Medhat A.**
Parametric Study of Seismic Soil-Tank Interaction. I: Horizontal Excitation, 800
Parametric Study of Seismic Soil-Tank Interaction. II: Vertical Excitation, 801
- Harper, Thomas G.**
Seismic Assessment of Tailings Dams, 1232
- Harrington, Laurel**
see Anton, Walter F., 1187
- Harris, Harold W.**
Taming Tornado Alley, 1176
- Harris, Robert B.**
A Challenge for Research, 115
- Hart, W. E.**
Flow in Trapezoidal Channels, 641
- Hartley, D. M.**
Interpretation of Kostiakov Infiltration Parameters for Borders, 582
- Hartmann, L.**
see Pan, Boshou, 351
- Hasebe, Norio**
see Okumura, Mikiya, 219
- Hasegawa, Kazuo**
see Takena, Koei, 777
- Haselton, Mark B.**
see Rahimzadeh, Housh, 1128
- Hasham, S. A.**
see Qasim, S. R., 333
- Hashmi, Asma M.**
see Benekohal, Rahim F., 975
- Hason, Stanley**
see Moselhi, Osama, 134
- Hasuo, Koichi**
see Nanni, Antonio, 915
- Hata, Kouichi**
see Takena, Koei, 777
- Hatanaka, Katsuya**
see Sakai, Tetsuo, 1091
- Hatanaka, Shigemitsu**
see Mizuno, Eiji, 245
- Hatfield, Kirk**
Theory and Experiments on Subsurface Contaminant Sorption Systems, 326
- Haunschild, Kurt B.**
see McCormick, Edward H., 1124
- Hauser, Gary E.**
Innovative Reregulation Weirs, 1163
- Havner, Kerry S.**
see Al-Gadhib, Ali H., 281
- Hawk, John K.**
Evaluating Spillway Adequacy, 1166
- Hay, Jonathan C.**
Fundamentals and Application of Windrow Composting, 11

- Hayden, William M., Jr.**
Management's Fatal Flaw: TQM Obstacle, 650
- Hayes-Roth, B.**
see Tommelein, I. D., 125
see Tommelein, I. D., 135
- Hazen, Glenn A.**
see Sargand, Shad M., 945
- He, Jianming**
Computation of Turbulent Shear Flow Over Surface-Mounted Obstacle, 293
- Heatwole, C. D.**
see Kumar, D., 625
- Hegdal, Jean S.**
see McCormick, Edward H., 1124
- Heidengren, Charles R.**
Settling Down Easy, 1235
- Heidtke, Thomas M.**
Partitioning Phosphorus Loads: Implications for Lake Restoration, 1070
- Hendricks, David W.**
see Vagliasindi, Federico, 339
- Hendrickson, Chris**
see Bullock, Darcy, 995
- Henrich, P.**
Nonlinear Water Waves Generated by Submarine and Aerial Landslides, 1096
- Henrion, Max**
see Rubin, Edward S., 313
- Hensey, Mel**
Making Teamwork Work, 1137
- Hensey, Melville**
Thoughts on Management of Acquisitions, 651
- Hensy, Mel**
Collective Excellence: Building Effective Teams, 1238
- Herbsman, Zohar**
Multiparameter Bidding System—Innovation in Contract Administration, 98
- Hertlein, Bernard H.**
Learning to Love NDT, 1121
- Hetherington, Mark D.**
see Lawton, Evert C., 442
- Hicks, F. E.**
Characteristic Dissipative Galerkin Scheme for Open-Channel Flow, 489
- Hicks, Jimmie C.**
Heavy Construction Estimates, With and Without Computers, 122
- High Level Radioactive Waste Management Program Committee**
High Level Radioactive Waste Management, 1253
- Hijazi, Adib M.**
Modeling and Simulating Learning Development in Construction, 131
- Hines, James M.**
Mechanical Equipment Requirements for Inflatable Lunar Structures, 32
- Hinze, Jimmie**
Role of Designers in Construction Worker Safety, 130
- Hirsh, Bill**
A New Fast Track for Public Works, 1129
- Hjalmarson, Hjalmar W.**
New Look at Regional Flood-Frequency Relations for Arid Lands, 518
- Hjelmfelt, A. T., Jr.**
see Lenau, C. W., 521
- Hjelmstad, K. D.**
Mutual Residual Energy Method for Parameter Estimation in Structures, 769
- Ho, Cariton L.**
see Fragasz, Richard J., 413
- Hobbs, Benjamin F.**
see Loaiciga, Hugo A., 477
- Hobelman, A. G., ed.**
see O'Rourke, T. D., ed., 1248
- Hoefler, Brian G.**
Systems-Engineering Methodology for Engineering Planning Applications, 734
- Hogan, Scott A.**
see Abt, Steven R., 554
- Holly, Forrest M., Jr.**
see Hsu, Shaohua Marko, 535
- Holtz, Robert O., ed.**
see Borden, Roy H., ed., 1250
- Holzapfel, Eduardo A.**
see Chávez-Morales, Jesús, 576
- Hoogenboom, P. J.**
see Smedema, L. K., 631
- Hooley, Roy**
see Moncarz, Piotr D., 721
- Hopmans, J. W.**
see Vogel, T., 627
- Hora, Stephen C.**
Acquisition of Expert Judgment: Examples from Risk Assessment, 148
- Horiuchi, S.**
see Kawasaki, H., 682
- Horiuchi, Sumio**
Fly-Ash Slurry Island: I. Theoretical and Experimental Investigations, 681
- Hosain, M. U.**
see Ahmad, M., 939
- Hossain, M. Akram**
Finite Element Modeling of Single-Solute Activated-Carbon Adsorption, 320
- Houck, Mark H.**
see Karamouz, Mohammad, 1040
see Sheer, Daniel P., 1056

- Houghton, David L.**
Retrofitting a Landmark, 1132
- Houston, William N.**
Laboratory versus Nondestructive Testing for Pavement Design, 980
- Hover, K. C.**
see Natesaiyer, K., 684
- Howard, H. Craig**
Primitive-Composite Approach for Structural Data Modeling, 61
- Howell, Christopher T.**
see Triantafyllou, Michael S., 202
- Hrudey, T. M.**
see Khoo, H. A., 170
- Hryciw, Roman D.**
Pullout Stiffness of Elastic Anchors in Slope Stabilization Systems, 412
- Hsu, Cheng-Tzu Thomas**
see Wang, Gang Gary, 901
- Hsu, D. S.**
see Yeh, Yi-Cherng, 71
- Hsu, Shaohua Marko**
Conceptual Bed-Load Transport Model and Verification for Sediment Mixtures, 535
- Hsu, Sheng-Yung**
Seismic Analysis Design of Frames with Viscoelastic Connections, 894
- Hsu, Yuen-Hung**
see Lu, Yean-Jye, 981
- Hu, Chaobin**
see Tang, Jiuru, 775
- Hu, Jialou**
see Liang, Robert Y., 177
see Liang, Robert Y., 240
- Hu, Sau-Lon James**
Kinematics of Nonlinear Random Waves near Free Surface, 279
- Hua, Shi-Qian**
see Yeh, William W.-G., 1074
- Huang, Ching-Chuan**
see Leshchinsky, Dov, 451
see Leshchinsky, Dov, 461
- Huang, Chi-Rong**
see Thomann, Robert V., 14
- Huang, Dongzhou**
Impact Analysis of Continuous Multigirder Bridges due to Moving Vehicles, 953
see Wang, Ton-Lo, 834
see Wang, Ton-Lo, 881
- Huang, Jian-Yuan**
see Kou, Chang-Huan, 918
- Huang, L. H.**
Influence of Seafloor on Acoustic Plane Wave, 273
Noise Barrier Simulated by Rigid Screen with Back Wall, 156
- Reflection and Transmission of Water Wave by Porous Breakwater, 1106
- Huang, Y. P.**
see Chan, H. C., 875
- Huang, Yu Ping**
see Raoof, Mohammed, 296
see Raoof, Mohammed, 942
- Hudec, Peter P.**
see Akpokodje, Euvie G., 676
- Hughes, Steven A., ed.**
Coastal Engineering Practice '92, 1237
Estimating Wave-Induced Bottom Velocities at Vertical Wall, 1089
- Hull, J. Q.**
see Wang, M. C., 358
- Hulme, T. W.**
Bored Tunneling for Singapore Metro, 112
- Hunt, Carlton D.**
see Bonner, James S., 312
- Hunt, James R.**
see Luthy, Richard G., 752
- Hurd, John O.**
see Sargand, Shad M., 945
- Hussein, R.**
Effects of Bonding Stiffness on Thermal Stresses in Sandwich Panels, 48
- Hutchens, Peyton E.**
Risk Reduction Through Indemnification Contract Clauses, 662
- Hutton, Paul H.**
Simulating THM Formation Potential in Sacramento Delta: Part I, 1067
Simulating THM Formation Potential in the Sacramento Delta: Part II, 1068
- Hwang, Lih-Shinn**
see Chen, Chun-Sung, 959
- Hyden, A. M.**
see Randolph, M. F., 404
- Ibarra-Encinas, German A.**
see DeNatale, Jay S., 422
- Ibbs, C. William**
see Kim, Jae-Jun, 79
see Songer, Anthony D., 85
- Ibrahim, Yaacob**
Calibration Strategy for Urban Catchment Parameters, 562
- Igarashi, Shin-ichi**
see Kawamura, Mitsunori, 688
- Igusa, Takeru**
see Xu, Kangming, 235
- Illangasekare, Tissa**
see Amadei, Bernard, 149
- Imada, Yasuo**
see Aida, Tadayoshi, 169

- Imberger, Jörg**
see Morison, Michael L., 1101
- Inan, Mehmet, ed.**
 Housing America in the Twenty-First Century, 1254
- Indraratna, B.**
 Performance of Test Embankment Constructed to Failure on Soft Marine Clay, 369
- Inouye, Randall R.**
 The Great Chicago Flood of 1992, 1218
- Inyang, Hilary I., ed.**
 Utilization of Waste Materials in Civil Engineering Construction, 1274
- Ioannides, Anastasios M.**
 Analysis and Design of Doweled Slab-on-Grade Pavement Systems, 1016
- Ioannides, Socrates**
 Tomorrow's Schools, 1123
- Irsyam, Masyhur**
see Hryciw, Roman D., 412
- Irwin, Michael**
see Terpening, Thomas B., 1197
- Isaacson, Michael**
 Time-Domain Second-Order Wave Diffraction in Three Dimensions, 1109
- Ishaq, Achi M.**
 Surface and Subsurface Drainage of Metropolitan City in Arid Zone, 572
- Islam, M. Saiful**
 Wind-Induced Response of Structurally Asymmetric High-Rise Buildings, 768
- Issa, Sameh S.**
 Novel Photoelastic Approach in Analysis of Elliptical Holes in Thick Plates, 250
- Iwan, W. D.**
see Jensen, H., 213
- Izumi, Masanori**
see Xue, Song-tao, 248
- Jackson, C. E., Jr.**
 ASCE Should Have a Construction Safety Committee, 730
- Jacobazzi, Joseph D.**
see Inouye, Randall R., 1218
- Jacobs, Timothy L.**
 Optimal Long-Term Scheduling of Bridge Deck Replacement and Rehabilitation, 987
 Optimal Scheduling of Consecutive Landfill Operations with Recycling, 332
 Probabilistic Environmental Risk of Hazardous Materials, 360
- Jaeger, Leslie G.**
see Bakht, Baidar, 848
- Jain, R.**
 Operational Strategies for Predenitrification Process, 309
see Hamilton, J., 308
- Jain, Subhash C.**
 Note on Lag in Bedload Discharge, 520
- Jain, Sudhir K.**
 Dynamics of Buildings with V-Shaped Plan, 218
- James, P. W.**
see Graham, D. I., 543
- James, Ray W.**
see Peart, Walter L., 784
see Xin, Dapeng, 1004
- James, Wesley P.**
see Bhaskar, Nageshwar R., 1066
- Janardhanam, R.**
 Mix Design for Flowable Fly-Ash Backfill Material, 690
- Janardhanam, Rajaram**
see Peindl, Richard D., 389
see Peindl, Richard D., 390
- Jang, Won**
see Nirmalakhandan, N., 319
- Janoo, Vincent C., ed.**
 Road and Airport Pavement Response Monitoring Systems, 1267
- Jao, M.**
see Wang, M. C., 358
- Jaselskis, Edward J.**
 Risk Analysis Approach to Selection of Contractor Evaluation Method, 139
see Russell, Jeffrey S., 126
see Russell, Jeffrey S., 138
- Jasina, Marek**
see Cywiński, Zbigniew, 716
- Jenkins, David A.**
see Tang, Tianxi, 160
- Jenkins, Scott A.**
 Tackling Trapped Sediments, 1134
- Jenkins, W. M.**
 Plane Frame Optimum Design Environment Based on Genetic Algorithm, 931
- Jennings, Marshall, ed.**
 Hydraulic Engineering: Saving a Threatened Resource—In Search of Solutions, 1255
- Jensen, H.**
 Response of Systems with Uncertain Parameters to Stochastic Excitation, 213
- Jensen, Hector**
 TMDs for Vibration Control of Systems with Uncertain Properties, 944
- Jensen, Jakob Laigaard**
 Modal and Wave Load Identification by ARMA Calibration, 228
- Jensen, M. E., ed.**
 Evapotranspiration and Irrigation Water Requirements, 2
- Jewell, R. A.**
 Analysis for Soil Reinforcement with Bending Stiffness, 448

Jia, Jinsheng

see Zhu, Bofang, 925

Jianping, Pei

Axisymmetric General Shells and Jointed Shells of Revolution, 937

Jiménez, Oscar F.

Water-Level Control in Hydropower Plants, 151

Jirka, Gerhard H.

see Alavian, Vahid, 557

Johns, Derek D.

see Abt, Steven R., 514

Johnson, Andrew M.

see Baus, Ronald L., 969

Johnson, Andy

see Freyermuth, Clifford L., 1182

Johnson, C. W.

see Wicks, J. M., 621

Johnson, James H.

see Luthy, Richard G., 752

Johnson, Marc C.

see Alavian, Vahid, 557

Johnson, Peggy A.

Assessing Time-Variant Bridge Reliability Due to Pier Scour, 519

Future Resources for Engineering, 727

Reliability-Based Pier Scour Engineering, 549

Johnson, Stewart W.

Engineering Issues for Early Lunar-Based Telescopes, 38

see Akgul, Ferhat, 16

Johnson, Thomas D.

see Purcell, Laurence J., 1186

Johnson, Thomas R.

see Stefan, Heinz G., 318

Joint Task Force of the American Society of Civil Engineers and the Water Environment Federation
Design of Municipal Wastewater Treatment Plants, 1241

Jones, Burton H.

see Washburn, Libe, 478

Jones, J. Sterling

Effects of Footing Location on Bridge Pier Scour, 485

Jones, Kathleen F.

Coupled Vertical and Horizontal Galloping, 159

Jones, LaDon

Adaptive Control of Ground-Water Hydraulics, 1036

Jones, Lindsay R.

see Mayes, Ronald L., 772

Jones, Norman L.

Mesh Generation for Estuarine Flow Modeling, 1115

Jones, T. E. R.

see Graham, D. I., 543

Jordet, Elljarn

see Kovacs, Imre, 765

Joshi, R. C.

see Wijeweera, H., 50

Joshi, Ramesh C.

Properties of Gypsum Wallboards Containing Fly Ash, 687

Jowitt, Paul W.

Optimal Pump Scheduling in Water-Supply Networks, 1062

Joynes, S. A.

see Borthwick, A. G. L., 362

Juang, C. H.

Mapping Slope Failure Potential Using Fuzzy Sets, 391

Unified Pavement Distress Index for Managing Flexible Pavements, 1012

Jubran, Jihad S.

see Cofer, William F., 803

Juhn, G.

Experimental Study of Secondary Systems in Base-Isolated Structure, 880

Juran, Ilan, ed.

see Borden, Roy H., ed., 1250

Kabir, Humayun R. H.

Boundary-Continuous Fourier Solution for Clamped Mindlin Plates, 239

Kabir, Mohammed G.

see Chang, Ching S., 472

see Chang, Ching S., 473

Kacimov, A. R.

Seepage Optimization for Trapezoidal Channel, 607

Kagawa, Takaaki

Moduli and Damping Factors of Soft Marine Clays, 441

Kalidindi, Satyanarayana N.

see Burati, James L., Jr., 96

Kalkani, E. C.

Ambient Temperature Effect in Concrete Dam Foundation Seepage, 368

Kamal, Osama

see Adeli, Hojjat, 21

see Adeli, Hojjat, 22

Kaman, Vicki S.

Conflict Management Training for Today's Engineering Managers, 664

Kamarthi, Sagar V.

Neuroform—Neural Network System for Vertical Formwork Selection, 70

Kamat, Manohar P.

see Mesquita, Luis, 23

Kandil, H. M.

Relating Crop-Yield Response to Water-Table Fluctuations, 579

Kane, J. H.

Boundary-Element Direct Reanalysis for Continuum Structures, 253

- Kane, M. D.
see Smith, J. A., 1041
- Kangari, Roozbeh
Financial Performance Analysis for Construction Industry, 111
- Kaniraj, Shenbaga R.
Stability Analysis of Reinforced Embankments on Soft Soils, 474
- Kanj, M. Y.
see Harajli, M. H., 900
- Kao, Shao-Kong
see Finch, Ralph, 73
- Karamchandani, A.
Event-to-Event Strategy for Nonlinear Analysis of Truss Structures. I, 806
Reliability Analysis of Truss Structures with Multi-state Elements. II, 807
Systems Reliability Approach to Fatigue of Structures, 794
- Karamouz, Mohammad
Optimization and Simulation of Multiple Reservoir Systems, 1040
Water Resources Planning and Management: Saving a Threatened Resource—In Search of Solutions, 1275
- Karantoni, Fillitsa V.
Computed Versus Observed Seismic Response and Damage of Masonry Buildings, 858
Effectiveness of Seismic Strengthening Techniques for Masonry Buildings, 863
- Kareem, A.
see Suhardjo, J., 303
- Karney, Bryan W.
Efficient Calculation of Transient Flow in Simple Pipe Networks, 527
- Kasal, B.
Nonlinear Finite-Element Model for Light-Frame Stud Walls, 933
- Kasal, Bohumil
Incorporating Load Sharing in Shear Wall Design of Light-Frame Structures, 948
- Kassap, Burton P.
see Druss, David L., 1120
- Kassar, M.
Effect of Strain Rate on Cold-Formed Steel Stub Columns, 935
Effect of Strain Rate on Material Properties of Sheet Steels, 934
- Katul, Gabriel G.
Analysis of Evaporative Flux Data for Various Climates, 613
- Kausel, Eduardo
Frequency Domain Analysis of Undamped Systems, 197
- Kawamura, Mitsunori
Fracture Toughness for Steel Fiber-Cement Paste Interfacial Zone, 688
- Kawasaki, H.
Fly-Ash Slurry Island: II. Construction in Hakucho Ohashi Project, 682
- Kawasaki, Hiromi
see Horiuchi, Sumio, 681
- Kayyali, O. A.
Chloride Binding Capacity in Cement-Fly-Ash Pastes, 673
- Kents, J. B.
see Clemmens, A. J., 600
see Clemmens, A. J., 601
- Keller, Andrew A.
see Steiner, Roy A., 637
- Keller, Thomas O.
see Castro, Gonzalo, 387
- Kelly, Trevor E.
see Mayes, Ronald L., 772
- Kennedy, John B.
Static Response of Prestressed Girders with Openings, 783
Ultimate Loads of Continuous Composite Bridges, 902
- Kerr, William C.
Exchange Place Station Subsurface Reconstruction and Improvements, 100
- Khalifa, A. A.
see Abdelsalam, M. W., 622
- Khan, Mohammad Shamim
Rebar Corrosion in $MgSO_4$ Solution, 693
- Khanbilvardi, Reza M.
see Ahmed, Shabbir, 487
- Khanna, P.
see Choudhari, Nilay, 324
- Khatab, A. F.
see Abdelsalam, M. W., 622
- Khatab, Ahmed F.
see Bakry, Mohamed F., 590
- Khayyal, Sari
see Evt, Sunil K., 60
- Khisty, C. J.
Reflection in Problem Solving and Design, 741
- Khisty, L. L.
see Khisty, C. J., 741
- Khoo, H. A.
Constitutive Model for Ice, 170
- Kihl, D. P.
see Sarkani, S., 172
- Kikkawa, Hideo
see Sekine, Masato, 500
- Kikuchi, Shinya
Scheduling Demand-Responsive Transportation Vehicles Using Fuzzy-Set Theory, 993
- Kilgore, Roger T.
see Jones, J. Sterling, 485

- Kim, Cheung H.**
Kinematics of 2-D Transient Water Waves Using Laser Doppler Anemometry, 1087
- Kim, Gwan**
Comprehensive Regional Socioeconomic Simulation System, 1030
- Kim, Jae-Jun**
Comparing Object-Oriented and Relational Data Models for Project Control, 79
- Kim, Moonja P.**
see Diekmann, James E., 114
- Kim, S.-C.**
see Maa, Jerome P.-Y., 1103
- Kim, Woon-Hyung**
Effects of Freezing on Hydraulic Conductivity of Compacted Clay, 423
- Kim, Y.**
see Bühler, J., 495
- Kindler, Janusz**
Rationalizing Water Requirements with Aid of Fuzzy Allocation Model, 1055
- King, D.**
see Faig, W., 1022
- King, W. S.**
Second-Order Inelastic Analysis Methods for Steel-Frame Design, 779
- Kiousis, P. D.**
see Navayogarah, N., 212
- Kiousis, Panos D.**
Associative Plasticity for Dilatant Soils, 200
- Kirby, James T.**
see Bailard, James A., 1081
- Kirkegaard, Poul Henning**
see Jensen, Jakob Laigaard, 228
- Kirsch, U.**
Minimum Weight Design of Structural Topologies, 856
- Kirschke, K. R.**
Histogram-Based Approach for Automated Pavement-Crack Sensing, 1013
- Kitipornchai, Stritawat**
see Al-Bermani, Faris G. A., 763
- Klein, Stephen J.**
Tying Back a Landslide, 1225
see Bischoff, John A., 1125
- Kline, Donald H.**
Four Propositions for Quality Management of Design Organizations, 645
- Klingler, Charles F.**
Laptop Automated Navigation Aid Positioning System with Differential GPS, 967
- Klingner, Richard E.**
see Cook, Ronald A., 850
- Klintering, P.**
see Christensen, F. T., 55
- Knocke, William R.**
Conditioning and Dewatering of Anaerobically Digested BPR Sludge, 345
- Knox, K. J.**
see Brickell, J. L., 742
- Ko, Hon-Yim**
see Budiman, Jeff S., 440
- Kobayashi, Nobuhisa**
Irregular Wave Setup and Run-up on Beaches, 1102
see Losada, Miguel, 1092
- Koehn, Enno**
Practitioner Involvement with Engineering Ethics and Professionalism, 729
- Koenders, M. A.**
Mathematical Model for Piping, 415
- Koerner, Robert M.**
Better Cover-Ups, 1160
- Koev, Kalin Nikolov**
Statistical Analysis of Formulas for Breakwater Armor Layer Design, 1093
- Kojima, Hisaya**
see Tokimatsu, Kohji, 449
- Konagai, Kazuo**
see Nogami, Toyooki, 373
- Konyha, K. D.**
Effects of Drainage and Water-Management Practices on Hydrology, 628
- Koo, T. K.**
Using Expert Systems to Manage Professional Survey Practices, 961
- Koopman, B.**
see Hamilton, J., 308
see Jain, R., 309
- Korol, Robert M.**
see Ghobarah, Ahmed, 833
- Korovesis, George T.**
see Ioannides, Anastasios M., 1016
- Kothyari, Umesh C.**
Rainfall Intensity-Duration-Frequency Formula for India, 488
Temporal Variation of Scour Around Circular Bridge Piers, 532
- Kottegoda, N. T.**
see Mukherjee, D., 608
- Kottwitz, Eugene R.**
see Gilley, John E., 578
see Gilley, John E., 614
- Kotzias, Panaghiotis C.**
Compaction Quality Control in Granular Shell of Earth Dam, 433
- Kou, Chang-Huan**
Free Vibration Analysis of Curved Thin-Walled Girder Bridges, 918
- Koumouis, Vlasik K.**
Statically Determinate Trusses Programmed in Logic, 84

- Kouwen, N.**
Modern Approach to Design of Grassed Channels, 623
- Kovacs, G. S.**
Swimming Pools Supported by Dissimilar Bearing Strata, 713
- Kovacs, Imre**
Analytical Aerodynamic Investigation of Cable-Stayed Helgeland Bridge, 765
- Krafft, Martin J.**
see Kim, Cheung H., 1087
- Kraft, Leland M., Jr.**
Submarine Flow Slide in Puget Sound, 452
- Krakiwsky, E. J.**
see Gao, Y., 958
- Krammes, Scott**
see Klingler, Charles F., 967
- Kranc, S. C.**
see Stessel, Richard Ian, 190
- Krauthammer, Theodor**
Combined Symbolic-Numeric Explosion Damage Assessment for Structures, 83
- Krebs, Peter**
see Bretscher, Ulrich, 325
- Krippachne, Robert C.**
Vertical Business Integration Strategies for Construction, 653
- Krishen, Kumar**
see Nader, Blair A., 42
- Krishnamoorthy, C. S.**
see Rajeev, S., 827
- Krishnappan, Bommanna G.**
see Correia, Luis R.P., 497
- Křístek, Vladimír**
see Bažant, Zdeněk P., 773
- Kruse, Thomas R.**
see Botha, Jan L., 996
- Kuchenrither, Richard D.**
see Hay, Jonathan C., 11
- Kuhnle, Roger A.**
Mean Size Distribution of Bed Load on Goodwin Creek, 556
- Kukreti, Anant R.**
Dynamic Analysis of Rigid Airport Pavements with Discontinuities, 989
Fundamental Frequency of Tapered Plates by Differential Quadrature, 225
- Kulhawy, Fred H.**
see Carter, John P., 408
- Kumar, B. L. Keshava**
see Kane, J. H., 253
- Kumar, D.**
Cost Models for Preliminary Economic Evaluation of Sprinkler Irrigation Systems, 625
- Kumar, M. S. Mohan**
see Misra, Rajeev, 620
- Kumara, Soundar R. T.**
see Kamarthi, Sagar V., 70
- Kung, Chen-Shan**
see Yang, Xiao-Liang, 560
- Kung, T. M.**
see Huang, L. H., 156
- Kunieda, Haruo**
Classical Buckling Load of Spherical Domes Under Uniform Pressure, 243
- Kuo, Shyh-Rong**
see Yang, Yeong-Bin, 205
- Kuo, Yau-Hwaug**
see Yeh, Yi-Cherng, 71
- Kuppussamy, T.**
see Nanda, A., 388
- Kusakabe, Osamu**
Large-Scale Loading Tests of Shallow Footings in Pneumatic Caisson, 457
- Kuwayama, Shinichi**
see Tokimatsu, Kohji, 450
- Kuzmanovic, Bogdan O.**
Design of Bridge Pier Pile Foundations for Ship Impact, 877
- Kwan, A. K. H.**
Analysis of Buildings Using Strain-Based Element with Rotational DOFs, 825
- Kwok, K. C. S.**
see Xu, Y. L., 155
- Kwon, Young B.**
Tests of Cold-Formed Channels with Local and Distortional Buckling, 857
- LaBoube, R. A.**
Estimating Uplift Capacity of Light Steel Roof System, 804
- Lade, Poul V.**
Static Instability and Liquefaction of Loose Fine Sandy Slopes, 371
- Lahla, A. M.**
see Yegian, M. K., 405
- Lahnert, Brant J.**
see Moncarz, Piotr D., 721
- Lai, M. L.**
see Chang, K. C., 867
- Lai, Yew Chin**
Dynamic Response of Beams on Elastic Foundation, 805
- Lam, W. F.**
Arc-Length Method for Passing Limit Points in Structural Calculation, 766
- Lan, Li-Tus**
see Fox, Patrick J., 434
- Landet, Einar**
Laboratory Testing of Ultimate Capacity of Dented Tubular Members, 818

- Landre, P. T.
see Haith, D. A., 317
- Lane, Leonard J.
see Weltz, Mark A., 626
- Lang, Laura
Water's New World, 1168
- Lang, Thomas A.
see Bischoff, John A., 1125
- Langenbach, Randolph
Earthquakes: A New Look at Cracked Masonry, 1219
- Lansley, Kevin E.
see Cullinane, M. John, 494
- Lapin, Mitchell S.
see Tavakoli, Amir, 984
- Larionov, V. P.
Safety and Service Life of Equipment Designed for Cold Climate Operation, 56
- Larsen, Donald A.
see Hanley, Richard C., 983
- Latham, C. T.
see Seible, F., 8
see Seible, F., 9
- Latheef, M. Imran
see Lence, Barbara J., 1061
- Laufer, Alexander
see Rosenfeld, Yehiel, 90
- Lawler, Desmond F.
see Luthy, Richard G., 752
- Lawton, Evert C.
Review of Wetting-Induced Collapse in Compacted Soil, 442
- Leasure, Jill D.
see Johnson, Peggy A., 727
- Leca, Eric
Preliminary Design for NATM Tunnel Support in Soil, 394
- LeCompagnon, Gilles
see Swift, M. Robinson, 1114
- Ledbetter, William B.
see Burati, James L., Jr., 91
- Ledesma, Ragnar H.
see Kukreti, Anant R., 989
- Lee, Byoung Ho
Optimal Locations of Monitoring Stations in Water Distribution System, 306
- Lee, Chin T.
see Fertis, Demeter G., 236
- Lee, Chi-Yuan
Model for Biological Reactors Having Suspended and Attached Growths, 366
- Lee, Clyde E.
see Gattis, J. L., 998
see Lum, Kit M., 994
- Lee, D. H.
see Juang, C. H., 391
- Lee, Dong-Guen
see Choi, Chang-Koon, 809
- Lee, E.
see Safayeni, F., 667
- Lee, G. C.
see Tong, M., 194
see Yao, G. C., 271
- Lee, Han-Lin
Performance Evaluation of Lake Shelbyville by Stochastic Dynamic Programming, 1047
- Lee, Hong-Yuan
see Yen, Chin-lien, 567
- Lee, I. K.
see Chu, J., 377
- Lee, Jong S.
Destabilizing Effect of Magnetic Damping in Plate Strip, 163
- Lee, Kwang Myong
Fracture Analysis of Mortar-Aggregate Interfaces in Concrete, 276
- Lee, S. L.
see Chow, Y. K., 425
- Lee, Seng-Lip
see Tan, Siew-Ann, 378
- Lee, Shyi-Lin
Bracing Requirements of Plane Frames, 844
- Lee, Woon-Sung
see Lai, Yew Chin, 805
- Lee, Yong W.
Nitrate Risk Management under Uncertainty, 1045
see Paek, James H., 108
- Lefebvre, Guy
Field Performance and Analysis of Steep Riprap, 445
- Léger, Pierre
Seismic-Energy Dissipation in MDOF Structures, 828
- Leicht, Robert J.
see Kasal, Bohumil, 948
- Leichti, R. J.
see Kasal, B., 933
- Leichti, Robert J.
Straight, Single-Tapered Composite I-Beams of Orthotropic Materials, 701
- Leick, Alfred
Beyond Push-Button GPS, 1175
Delineating Theory for GPS Surveying, 960
- Leira, B. J.
see Olufsen, A., 907
- Leitch, A. M.
see Baines, W. D., 501
- LeMenager, Paul A.
Technology is Here—Are You Ready?, 661

- Lenau, C. W.**
River Bed Degradation Due to Abrupt Outfall Lowering, 521
- Lence, Barbara J.**
Reservoir Management and Thermal Power Generation, 1061
see Burn, Donald H., 343
- Lennox, William C.**
see Dhillon, Surjit S., 46
- Leong, E. C.**
see Randolph, M. F., 404
- Leroueil, S.**
see Diaz-Rodriguez, J. A., 417
- Leshchinsky, Dov**
Generalized Slope Stability Analysis: Interpretation, Modification, and Comparison, 451
Generalized Three-Dimensional Slope-Stability Analysis, 461
- Leung, Christopher K. Y.**
Fracture-Based Two-Way Debonding Model for Discontinuous Fibers in Elastic Matrix, 294
see Li, Victor C., 291
- Lev, O.**
Evaluation of Ozone Disinfection Systems: Characteristic Time T , 322
Evaluation of Ozone Disinfection Systems: Characteristic Concentration C , 336
- Levitt, R. E.**
see Tommelein, I. D., 125
see Tommelein, I. D., 135
- Levy, A. J.**
see Lu, C. H., 199
- Levy, Matthys P.**
see Webster, Anthony C., 1133
- Lewis, Gary L.**
Jury Verdict: Frequency versus Risk-Based Culvert Design, 1046
- Leznicki, Jacek K.**
Loss of Ground During CFA Pile Installation in Inner Urban Areas, 416
- Li, C. Q.**
Reliability Analysis of Creep and Shrinkage Effects, 886
- Li, Heyi**
see Acar, Yalcin B., 466
- Li, K. S.**
Elastic Solutions for Arbitrarily Shaped Foundations, 414
Point-Estimate Method for Calculating Statistical Moments, 242
- Li, K. S. Y.**
see Gorji, M., 25
- Li, Shu-Guang**
Stochastic Theory for Irregular Stream Modeling. Part I: Flow Resistance, 531
- Li, Victor C.**
Postcrack Sealing Relations for Fiber Reinforced Cementitious Composites, 675
Steady-State and Multiple Cracking of Short Random Fiber Composites, 291
- Li, Yaxin**
Elastic Stability of Composite Column, 295
- Li, Yisheng**
see Zhu, Bofang, 925
- Li, Yuan N.**
Stability Theory of Cohesive Crack Model, 189
- Li, Z.**
see Yang, J. N., 237
see Yang, J. N., 238
see Yang, J. N., 249
see Yang, J. N., 290
- Liang, Kee-Ming**
see Tan, Siew-Ann, 378
- Liang, Robert Y.**
Anisotropic Plasticity Model for Undrained Cyclic Behavior of Clays. I: Theory, 379
Anisotropic Plasticity Model for Undrained Cyclic Behavior of Clays. II: Verification, 380
Quantitative NDE Technique for Assessing Damages in Beam Structures, 240
Theoretical Study of Crack-Induced Eigenfrequency Changes on Beam Structures, 177
see Li, Yuan N., 189
- Liang, Z.**
see Tong, M., 194
- Lieberman, Jon C.**
see Lee, Han-Lin, 1047
- Liew, K. M.**
Elastic Buckling of Rectangular Plates with Curved Internal Supports, 841
Response of Plates of Arbitrary Shape Subject to Static Loading, 260
see Wang, C. M., 193
- Liggett, James A.**
see Pudar, Ranko S., 528
- Lin, A. N.**
Seismic Performance of Fixed-Base and Base-Isolated Steel Frames, 208
- Lin, C. P.**
see Weng, C. C., 764
- Lin, Chaun-Ping**
see Dick, Richard D., 19
see Goodings, Deborah J., 18
- Lin, Ching-Chang**
see Paris, Anthony J., 270
- Lin, Feng-Bor**
Saturation Flow and Capacity of Shared Permissive Left-Turn Lane, 1008
- Lin, George**
Stability of Frames with Grade Beam and Soil Interaction, 161

- Lin, Shin-Hua**
ASCE LRFD Method for Stainless Steel Structures, 817
- Lin, Y. K., ed.**
Probabilistic Mechanics and Structural and Geotechnical Reliability, 1264
- Linaweaver, F. Pierce, ed.**
Environmental Engineering: Saving a Threatened Resource—In Search of Solutions, 1246
- Linehan, P. W.**
Pipeline Response to Pile Driving and Adjacent Excavation, 383
- Lingineni, Suresh**
Modeling of Soil Venting Processes to Remediate Unsaturated Soils, 314
- Linkenheld, J. S.**
Knowledge-Based System for Design of Signalized Intersections, 982
- Liong, Shie-Yui**
see Ibrahim, Yaacob, 562
- Liska, Roger W.**
Financial Incentive Programs for Average-Size Construction Firm, 129
- Littlejohn, Stuart**
Advancing Anchorage Technology, 1181
- Liu, Dajin**
see Stevens, David J., 223
- Liu, Fubo**
Computation Method for Regulating Unsteady Flow in Open Channels, 619
- Liu, G. T.**
see Pekau, O. A., 268
- Liu, Jian-Min**
see Yeh, William W.-G., 1074
- Liu, S. C.**
see Yang, J. N., 237
see Yang, J. N., 238
see Yang, J. N., 249
see Yang, J. N., 290
- Llinas, Estela S.**
see Johnson, Peggy A., 727
- Lo, Kam-Hung**
see Bergado, Dennes T., 421
- Lo, S.-C. R.**
see Chu, J., 377
- Loaiciga, Hugo A.**
Review of Ground-Water Quality Monitoring Network Design, 477
- Loftis, Jim C.**
see Mizyed, Numan R., 1060
- Loganathan, N.**
Strength Correlation Factor for Residual Soils, 396
- Loganathan, Vasudevan G.**
see Segarra-Garcia, Rafael, 1065
- Logcher, Robert**
see Ahmed, Shamim, 65
- Longinow, A.**
see Linehan, P. W., 383
- Losada, Miguel**
Armor Stability on Submerged Breakwaters, 1092
- Løset, Fredrik**
see Bhasin, Rajinder, 1230
- Lotsberg, Inge**
see Landet, Einar, 818
- Loucks, Daniel P.**
Water Resource Systems Models: Their Role in Planning, 1048
- Lovett, Thomas G.**
Double Diamonds: New Brand for a Texas Bridge, 1149
- Lu, C. H.**
Necking of Creep-Cavitating Bars, 199
- Lu, F.**
Moving Hinge in Large-Displacement Problems, 263
- Lu, Le-Wu**
see Chasten, Cameron P., 831
- Lu, Ning**
Empirical Estimation of Double-Layer Repulsive Force between Two Inclined Clay Particles of Finite Length, 399
- Lu, Xueren**
see Dai, Dingzhong, 1057
- Lu, Yean-Jye**
Vehicle Classification Using Infrared Image Analysis, 981
- Lu, Zhi-Tao**
see Sun, Bao-Jun, 924
- Luah, M. H.**
see Fan, S. C., 216
- Luco, J. E.**
Identification of Soil Properties from Foundation Impedance Functions, 406
- Luettich, R. A.**
see Westerink, J. J., 551
- Luger, G. F.**
see Ross, T. J., 87
see Ross, T. J., 88
- Lui, Eric M.**
Geometrical Imperfections on Inelastic Frame Behavior, 837
- Lukas, Robert G.**
see Schexnayder, Cliff, 1144
- Lum, Kit M.**
Actuated Traffic Signal Control at Diamond Interchange, 994
- Lund, Jay R.**
Benefit-Cost Ratios: Failures and Alternatives, 1042
see Andrews, Elizabeth S., 1038
see Englehardt, James D., 361
- Lundberg, Jan**
Collisional Restitution Dependence on Viscosity, 211

AUTHOR INDEX

Matthews

- Lutes, Loren D., ed.
Engineering Mechanics, 1245
- Luthy, Richard G.
Future Concerns in Environmental Engineering
Graduate Education, 752
- Lutterotti, Luca
see Ferrari, Mauro, 269
- Lyberatos, G.
see Hamilton, J., 308
see Jain, R., 309
- Lyn, D. A.
Density Currents and Shear-Induced Flocculation in
Sedimentation Tanks, 517
Turbulence Characteristics of Sediment-Laden Flows
in Open Channels, 524
- Ma, Chien-Ching
Antiplane Problems of Monoclinic Material, 259
- Ma, Fenggang
see Liang, Robert Y., 379
see Liang, Robert Y., 380
- Maa, Jerome P.-Y.
Effects of Bottom Friction on Wave Breaking Using
RCPWAVE Model, 1103
- Maamoun, G. A.
see Issa, Sameh S., 250
- Machina, D. W.
Numerical and Physical Modeling of Air Diffuser
Plume, 321
- Madugula, Murty K. S.
see Adluri, Seshu Madhava Rao, 865
- Maeda, Yoshito
see Kusakabe, Osamu, 457
- Magoon, Orville T., ed.
Durability of Stone for Rubble Mound Breakwaters,
1242
- Maheshwari, B. L.
Modeling Shallow Overland Flow in Surface Irriga-
tion, 586
- Maier, G.
see Comi, C., 297
- Maldague, Xavier
see Lu, Yean-Jye, 981
- Male, James W.
Model for Prescribing Ground-Water Use Permits,
1069
- Maloney, William F.
see Federle, Mark O., 110
- Malvern, Lawrence E.
see Tang, Tianxi, 160
- Mamlouk, Michael S.
see Houston, William N., 980
- Mamoon, S. M.
Time Domain Analysis of Dynamically Loaded Sin-
gle Piles, 162
- Mandal, Utpal K.
see Jain, Sudhir K., 218
- Manolis, G. D.
see Juhn, G., 880
- Mantz, Peter A.
Cohesionless Fine-Sediment Bed Forms in Shallow
Flows, 510
- Mar, Brian W.
see Hoefler, Brian G., 734
- Marasa, Michael J.
see Flick, Loren D., 1196
- Marchand, Jaques
see Banthia, Nemkumar, 674
- Marcondes, Jorge A.
Predicting Vertical Acceleration in Vehicles Through
Road Roughness, 970
- Marcotte, D.
see Gallichand, J., 624
- Marikunte, Shashidhara
see Soroushian, Parviz, 692
- Mariño, Miguel A.
see Chávez-Morales, Jesús, 576
see Shamsai, Abolfazl, 612
- Mark, Robert
see Nigbor, Robert, 1216
- Markow, Michael
see McNeil, Sue, 999
- Martin, Francisco L.
see Losada, Miguel, 1092
- Martin-Benito, José Mari Tarjuelo
Working Conditions of Sprinkler to Optimize Appli-
cation of Water, 635
- Martini, Kirk
see Sause, Richard, 74
- Mase, Hajime
see Sakai, Tetsuo, 1091
- Maslehuddin, Mohammed
Strength and Corrosion Resistance of Superplasti-
cized Concretes, 680
- Mason, John M., Jr.
Identification of Inappropriate Driving Behaviors,
985
- Mastbergen, Dick R.
see Winterwerp, Johan C., 559
- Masterman, Richard
Predicting Influence of Bank Vegetation on Channel
Capacity, 530
- Matsoukis, Panayis-Fokion
Three-Dimensional Characteristics Model of Wind-
Generated Turbulent Flow, 244
- Matsoukis, Panayis-Fokion C.
Tidal Model Using Method of Characteristics, 1095
- Matsukawa, Joy
Conjunctive-Use Planning in Mad River Basin, Cali-
fornia, 1043
- Matthews, Michael F.
see Burati, James L., Jr., 96

- Maxwell, W. Hall C.
see Seo, Il Won, 553
- May, M.
see Randolph, M. F., 404
- Mayes, Ronald L.
 AASHTO Seismic Isolation Design Requirements for Highway Bridges, 772
see Button, Martin R., 896
- Mays, Larry W.
see Cullinan, M. John, 494
- Mazzuca, Michael
see Fanjiang, Guang-Nan, 1220
- McBean, E.
see Schmidtke, K., 316
- McCambridge, James A.
see Kaman, Vicki S., 664
- McCarthy, E. J.
 Hydrologic Model for Drained Forest Watershed, 589
- McCarthy, S. C.
see Tiong, Robert L. K., 102
- McCarty, Thomas R.
see Mohamoud, Y., 593
- McCavitt, N.
 Dynamic Stiffness Analysis of Concrete Pavement Slabs, 1003
- McConnel, R. E.
 Force Deformation Equations for Initially Curved Laterally Loaded Beam Columns, 229
 Stiffness Expressions for Element with Central and End Springs, 810
- McConnell, Hugh L.
see Stefan, Heinz G., 318
- McCormick, Edward H.
 Staffing Up for a Major Program, 1124
- McCormick, Michael E.
 Positive Drift of a Backward-Bent Duct Barge, 1084
- McCorquodale, J. A.
see Machina, D. W., 321
see Zhou, Siping, 357
- McCorquodale, John A.
see Zhou, Siping, 552
- McCullough, Bob G.
 Automated Construction Field-Data Management System, 1001
see Krippaehne, Robert C., 653
- McDermott, Joseph M.
 Advanced Technology Applications in Chicago-Area Freeway Traffic Management Program, 997
- McDonald, James R.
see Harris, Harold W., 1176
- McEnroe, Bruce M.
 Preliminary Sizing of Detention Reservoirs to Reduce Peak Discharges, 561
- McFarquhar, Dudley G.
 The Crown and the Curtain Wall, 1194
- McGuire, William
 Comments on L'Ambiance Plaza Lifting Collar/Shearheads, 710
see Ziemian, Ronald D., 898
see Ziemian, Ronald D., 899
- McInnis, Duncan
see Karney, Bryan W., 527
- McIntosh, K. R.
see Weaver, Ken, 1165
- McKinley, W. Scott
 Cleaning Up Chromium, 1146
- McKnight, Charles A.
see Abt, Steven R., 570
- McLain, Thomas E.
 Strength of Lag-Screw Connections, 916
see Foliente, Greg C., 891
- McLaughlin, Dennis
see Li, Shu-Guang, 531
- McLean, Francis G., ed.
see Hansen, Kenneth D., ed., 1268
- McLeod, Harvey N.
see Harper, Thomas G., 1232
- McMahon, T. A.
see Maheshwari, B. L., 586
- McNeil, Sue
 Emerging Issues in Transportation Facilities Management, 999
- McNelis, M.
see Mesarovic, S., 210
- McPhillips, Loren C.
see McKinley, W. Scott, 1146
- McVay, M. C.
 Design of Socketed Drilled Shafts in Limestone, 455
- Mebarkia, S.
 Compressive Behavior of Glass-Fiber-Reinforced Polymer Concrete, 679
- Meek, Jethro W.
 Cone Models for Homogeneous Soil. I, 400
 Cone Models for Soil Layer on Rigid Rock. II, 401
- Mehta, Brijesh Kumar
 Design and Operation of On-Farm Irrigation Ponds, 618
- Mehta, Kishor C.
see Harris, Harold W., 1176
- Melchers, R. E.
 Load-Space Formulation for Time-Dependent Structural Reliability, 204
see Li, C. Q., 886
- Melching, Charles S.
 Improved First-Order Uncertainty Method for Water-Quality Modeling, 354
- Melville, B. W.
 Local Scour at Bridge Abutments, 504
- Melville, Bruce W.
 Bridge Pier Scour with Debris Accumulation, 545

- Mendoza, Cesar
Effects of Porous Bed on Turbulent Stream Flow
above Bed, 540
- Mercier, G.
see Couillard, D., 355
- Merrill, Theodore F.
see Wang, Tung-Ming, 774
- Mesarovic, S.
Dynamic Behavior of Nonlinear Cable System. I, 206
Dynamic Behavior of Nonlinear Cable System. II,
207
Probability of Crack Growth in Poisson Field of
Penny Cracks, 210
- Mesquita, Luis
Simultaneous Design and Control of Stiffened Lami-
nated Composite Structures, 23
- Mesri, G.
Postdensification Penetration Resistance of Clean
Sands, 12
- Mesri, Gholamreza
see Stark, Timothy D., 460
- Messmer, A.
Multireservoir Sewer-Network Control via Multivari-
able Feedback, 1071
- Miao, Bingqi
Recursive Parameter Estimation for ARMA Simula-
tions, 304
- Michalowski, Radoslaw L.
Bearing Capacity on Nonhomogeneous Cohesive
Soils under Embankments, 424
- Migita, Yasuhiro
Local and Interaction Buckling of Polygonal Section
Steel Columns, 904
- Miki, Chitoshi
see Takena, Koei, 795
- Miller, B. L.
see Brickell, J. L., 742
- Miller, Craig E.
see Hines, James M., 32
- Miller, Robert E.
see Yuan, Fuh-Gwo, 173
- Miller, Russell J., ed.
see Sadeh, Willy Z., ed., 1244
- Milne, G. D.
see Stanley, S. J., 53
- Miloradov, M.
Planning and Management of Water-Resource Sys-
tems in Developing Countries, 1072
- Mirza, S. A.
Statistical Analysis of Slender Composite Beam-
Column Strength, 832
- Misra, Anil
see Chang, Ching S., 254
- Misra, Rajeev
Transients in Canal Network, 620
- Mistichelli, Mark P.
see Jones, J. Sterling, 485
- Mitchell, P. H.
see Winandy, J. E., 689
- Mitchell, Philip J.
see Ngo, Chien D., 1189
- Miti-Kavuma, M.
see Robinson, D. N., 251
- Mitropoulos, Panagiotis
see De La Garza, Jesus M., 116
- Mizuno, Eiji
Compressive Softening Model for Concrete, 245
- Mizyed, Numan R.
Operation of Large Multireservoir Systems Using
Optimal-Control Theory, 1060
- Moan, T.
see Olufsen, A., 907
- Mobasher-Fard, Hamid
see Zielinski, Zenon A., 919
- Moehle, Jack P.
see Wallace, John W., 849
- Mohammadi, Jamshid
Statistical Evaluation of Truck Overloads, 1010
- Mohamoud, Y.
Optimum Center-Pivot Irrigation System Design
with Tillage Effects, 593
- Mohan, S.
Multiobjective Analysis of Multireservoir System,
1059
see Raman, H., 588
- Mojtahedi, Soheil
see Fenves, Gregory L., 816
- Molden, David J.
see Gates, Timothy K., 602
- Molina, Jeannette L.
see Rubin, Robert A., 1233
- Monahan, Rosemary
Controlling Nitrogen in Coastal Waters, 1142
- Moncarz, Piotr D.
Analysis of Stability of L'Ambiance Plaza Lift-Slab
Towers, 721
- Monforton, Gerard R.
see Adluri, Seshu Madhava Rao, 865
- Monismith, C. L.
see Chua, K. H., 1017
- Montbrun-Di Filippo, Jenny
see Valdés, Juan B., 1063
- Monti, Amy
see Singh, Virendra, 1143
- Monti, Giorgio
Nonlinear Cyclic Behavior of Reinforcing Bars
Including Buckling, 943
- Moore, Gordon H.
Offshore Challenge, 1208

- Moorty, Shashi**
Temperature Dependent Bridge Movements, 819
- Morad, A. A.**
Path-Finder: AI-Based Path Planning System, 66
- Moradi, B.**
Dimensional Analysis of Buckling of Stiffened Composite Shells, 187
- Moreno, Ricardo Javier**
Ecuador's Rural Cadasters and Land Titling Project (CATIR): Technical Process, 966
- Morgenthaler, George W.**
Optimizing Launch-on-Time Probability, 41
- Moridis, George J.**
High Frequency Basin Irrigation Design for Upland Crops in Rice Lands, 611
- Morison, Michael L.**
Water-Level Oscillations in Esperance Harbour, 1101
- Morley, C. T.**
see Lam, W. F., 766
- Morrall, John**
Planning for Movement of Very Large, Slow-Moving Vehicles, 992
- Morris, Gregory L.**
see Fan, Jiahua, 490
see Fan, Jiahua, 491
- Morroni, Loretta A.**
see Nowak, Paul S., 37
- Mosallam, Ayman S.**
Short-Term Behavior of Pultruded Fiber-Reinforced Plastic Frame, 866
- Moselhi, Osama**
Automation of Concrete Slab-on-Grade Construction, 134
- Moser, David A., ed.**
see Haimes, Yacov Y., ed., 1266
- Motz, Louis H.**
Drawdowns for Nonleaky Aquifer Flow with Storage in Finite-Width Sink, 617
- Moughton, David W.**
see Fiuzat, Abbas A., 512
- Moutal, Harvey P.**
GIS: New York's Pipe Dream, 1136
- Mtundu, N. Davies**
see Turcotte, Brian R., 63
- Mueller, Frederick A.**
see Male, James W., 1069
- Mueller, J. L.**
see Audibert, J. M. E., 1079
- Mueller, John A.**
see Thomann, Robert V., 14
- Muju, S.**
see Mesarovic, S., 210
- Mukherjee, D.**
Stochastic Model for Soil Moisture Deficit in Irrigated Lands, 608
- Muleshkov, Angel**
see Banerjee, Sunirmal, 185
- Muller, John F.**
Prestressed-Concrete Railway-Bridge Live-Load Strains, 776
- Muralidharan, Raman**
see Krauthammer, Theodor, 83
- Murff, J. D.**
see Randolph, M. F., 404
- Murray, David W.**
see Chiu, Chao-Lin, 525
- Murthy, D. S. Ramachandra**
Structural Efficiency of Internally Ring-Stiffened Steel Tubular Joints, 926
- Murty, V. V. N.**
see Azhar, Aftab H., 573
- Musil, S. A.**
see Hart, W. E., 641
- Muvdi, B. B.**
see Soo, Sweanum, 54
- Muyibi, Suley A.**
Planning Water Supply and Sanitation Projects in Developing Countries, 1058
- Nader, Blair A.**
Issues in Developing Control Zones for International Space Operations, 42
- Nagaraj, T. S.**
see Dwarakanath, H. V., 906
see Pandian, N. S., 398
- Nagarajaiah, Satish**
Experimental Study of Sliding Isolated Structures with Uplift Restraint, 851
- Naghdi, A. K.**
Bending of Rectangular Cross-Section Cantilever with Cylindrical Cutouts, 203
- Nakagawa, Hajime**
see Takahashi, Tamotsu, 558
- Nakamura, Takuji**
see Okumura, Mikiya, 219
- Nakhla, G. F.**
Modeling of Toxic Wastewater Treatment by Expanded-Bed Anaerobic GAC Reactors, 337
- Nam, C. H.**
Government-Industry Cooperation: Fast-Track Concrete Innovation, 117
- Noncontractual Methods of Integration on Construction Projects, 113**
- Strategies for Technology Push: Lessons from Construction Innovations, 120**
- see* Cushman, Nancy S., 97
- Namdar, Khosrow**
see Argiris, Leo, 1130
- Namini, Ahmad**
Finite Element-Based Flutter Analysis of Cable-Suspended Bridges, 843

- Nanda, A.
Elastic-Plastic Analysis of Footings on Anisotropic Soils, 388
- Nanni, Antonio
Bond Anchorage of Pretensioned FRP Tendon at Force Release, 915
Education and Research in Japan's Construction Industry, 747
Properties of Aramid-Fiber Reinforced Concrete and SIFCON, 672
- Napier, Thomas R.
see Paek, James H., 108
see Songer, Anthony D., 85
- Naraine, Krishna
Stress-Strain Curves for Brick Masonry in Biaxial Compression, 839
- Nash, Jeffrey W.
see Knocke, William R., 345
- Natale, L.
see Fugazza, M., 1077
- Natesaiyer, K.
Protected-Paste Volume of Air-Entrained Cement Paste. Part 1, 684
- Nathan, Lin
see Fanjiang, Guang-Nan, 1220
- Navayogarajah, N.
Hierarchical Single-Surface Model for Static and Cyclic Behavior of Interfaces, 212
- Navin, Francis P. D.
Estimating Truck's Critical Cornering Speed and Factor of Safety, 976
- Neelakanta, P. S.
see Arockiasamy, M., 49
- Neelakantan, G.
Balanced Seismic Design of Anchored Retaining Walls, 410
- Nelson, Arthur C.
Elements of Effective State Land-Use Planning Policy, 1031
Estimating Functional Population for Facility Planning, 1027
Positive Influence of Impact-Fee Policy in Urban Planning and Development, 1028
Price Effects of Landfills on Residential Land Values, 1034
- Nelson, Mark E.
Appropriate Technology for Flood Warnings, 1172
- Neumann, Lance
see McNeil, Sue, 999
- Newman, Alexander
Engineering Pre-engineered Buildings, 1199
- Newton, Robert
see Goubert, Didier, 1223
- Nezu, Ichisa
see Tominaga, Akihiro, 480
- Ngo, Chien D.
Dual-System Cleanup, 1189
- Nicholas, James C.
see Nelson, Arthur C., 1027
see Nelson, Arthur C., 1028
- Nicholls, Robert
Backfill-Stiffened Foundation Wall Design, 465
Construction of Grout-Impregnated Fabric-Reinforced Pipes, 107
- Niedzwecki, J. M.
see Thampi, S. K., 209
- Niedzwecki, John M.
Wave Runup and Forces on Cylinders in Regular and Random Waves, 1116
see Lutes, Loren D., ed., 1245
- Niewitecki, Stefan
see Cywiński, Zbigniew, 716
- Nigbor, Robert
Measured to the Max, 1216
- Nirmalakhandan, N.
Removal of 1,2 Dibromo-3-Chloropropane by Countercurrent Cascade Air Stripping, 319
see Tang, N. H., 307
- Nixon, W. A.
Flexural Strength of Sand-Reinforced Ice, 3
- Niyogi, N.
see Choudhari, Nilay, 324
- Niznik, James A.
see Hauser, Gary E., 1163
- Nnadi, Fidelia N.
Motion of Contact-Load Particles at High Shear Stress, 568
- Noble, David H.
see Afzal, Javaid, 587
- Nogami, Toyooki
Nonlinear Soil-Pile Interaction Model for Dynamic Lateral Motion, 373
- Noor, Ahmed K.
Postbuckling Response Simulations of Laminated Anisotropic Panels, 40
Steady-State Nonlinear Heat Transfer in Multilayered Composite Panels, 252
Thermomechanical Buckling of Multilayered Composite Plates, 175
Three-Dimensional Solutions for Thermal Buckling of Multilayered Anisotropic Plates, 195
- Norris, Gary M.
see Siddharthan, Raj, 782
- Novak, M.
see El-Marsafawi, H., 395
- Nowak, Paul S.
Geometric Modeling of Inflatable Structures for Lunar Base, 37
- Nunn, Norman P.
see Fischer, Gary W., 647
- Nuti, Camillo
see Monti, Giorgio, 943

- Obeysekera, J. T. B.**
see Salas, Jose D., 538
- O'Connor, Donald J.**
see Blumberg, Alan F., 534
- Odawara, Takuro**
see Horiuchi, Sumio, 681
- Oehlers, Deric John**
Reinforced Concrete Beams with Plates Glued to Their Soffits, 870
Residual Strength of Structural Components Subjected to Cyclic Loads, 903
Shear Connectors in Composite Beams with Longitudinally Cracked Slabs, 869
- Ogawa, Norio**
see Aida, Tadayoshi, 169
- Oh, Byung Hwan**
Flexural Analysis of Reinforced Concrete Beams Containing Steel Fibers, 914
- Oh, S.-T.**
see Chang, K. C., 867
- Ohashi, M.**
see Sakumoto, Y., 778
- Ohlsson, Sven**
Elastic Wood Properties from Dynamic Tests and Computer Modeling, 905
- Ohuchi, Hajime**
Slender Reinforced Concrete Bridge Towers under Cyclic Lateral Load, 6
- Ohuchi, Masatoshi**
see Kusakabe, Osamu, 457
- Ojha, C. S. P.**
Appropriate Use of Deep-Bed Filtration Models, 365
- Okumura, Mikiya**
Cracking and Debonding on Bimaterial Interface under Uniform Loading, 219
- Olden, Robert E.**
Introduction to Ownership and Transition. I: Ownership Transfer Considerations, 669
Introduction to Ownership and Transition. II: Succession and Firm Valuation, 670
- Oleynik, David J.**
see Omelchenko, Victor, 1171
- Olin, Manuel**
Participative Process in Tube Well Irrigation Development, 634
- Oloufa, Amr A.**
Construction Applications of Relational Data Bases in Three-Dimensional GIS, 64
Feedback Mechanisms for Operational Simulation, 69
- Olufsen, A.**
Uncertainty and Reliability Analysis of Jacket Platform, 907
- Omelchenko, Victor**
A Monumental Task, 1171
- O'Melia, Charles R.**
see Luthy, Richard G., 752
- O'Neill, Michael W.**
see Raines, Richard D., 372
- Oppenheim, Irving J.**
see Bullock, Darcy M., 80
see Rigopoulos, Dionysis R., 75
- Oran, C.**
Asymptotic Analysis of TLP Tendons and Risers, 157
Effect of Static Offset on TLP Modeling, 158
- Ordway, Jeffrey**
see McNeil, Sue, 999
- Orgeret, M.**
BEST: New Satellite Mission Dedicated to Tropical System Energy Budget, 15
- Orlob, G. T.**
Water-Quality Modeling for Decision Making, 1054
- O'Rourke, Michael J.**
Roof-Snow Load for Seismic-Design Calculations, 887
- O'Rourke, T. D., ed.**
Excavation and Support for the Urban Infrastructure, 1248
- Osborn, Nigel B. R.**
see Flick, Loren D., 1196
- Osman, Ashraf**
see Ghobarah, Ahmed, 833
- Ostapenko, Alexis**
see Wolchuk, Roman, 788
- Osteraas, John D.**
see Moncarz, Piotr D., 721
- Ostrowski, Pete, Jr.**
see Alavian, Vahid, 506
- Otani, Jun**
see Nogami, Toyooki, 373
- Oumera, Ayad**
see Lee, Kwang Myong, 276
- Oussou, Ahmed**
see Reddy, J. Mohan, 632
- Ouyang, Chengsheng**
see Tang, Tianxi, 936
- Oweis, Issa S.**
Piles Over Problems Sites, 1155
- Ožbolt, Joško**
Microplane Model for Cyclic Triaxial Behavior of Concrete, 234
see Bažant, Zdeněk P., 186
- Ozcebe, Guney**
see Saatcioglu, Murat, 893
- Paaswell, Robert E., ed.**
Site Impact Traffic Assessment: Problems and Solutions, 1269
- Paavola, Juha**
Flexural-Torsional Stability of Thin-Walled Columns, 299
- Pacheco, Benito M.**
see Fujino, Yozo, 275

- Pacheco-Ceballos, Raul
Bed-Load Coefficients, 555
- Packer, Jeffrey A.
see Frater, George S., 912
see Frater, George S., 913
- Padgett, Theodore G., Jr.
Manufactured Wood Joists—Noncollapse Failure, 709
- Paek, James H.
Selection of Design/Build Proposal Using Fuzzy-Logic System, 108
- Paine, John N.
Open-Channel Flow Algorithm in Newton-Raphson Form, 594
- Pak, Pyong Sik
see Kim, Gwan, 1030
- Palani, G. S.
Finite Element Analysis of Thin-Walled Curved Beams Made of Composites, 871
- Palassopoulos, G. V.
Response Variability of Structures Subjected to Bifurcation Buckling, 222
- Palermo, Michael R.
see Thackston, Edward L., 346
- Paliwal, D. N.
Hypar Shell on Pasternak Foundation, 230
- Pan, Boshou
Activity of Biomass in RBC System Treating Pulp Industrial Wastewater, 351
- Pan, C. L.
see Kassab, M., 935
- Pan, Tso-Chien
Field Load Test on Full-Scale Reinforced Concrete Frame, 715
Performance of Viaduct Girders under Static and Dynamic Loads, 711
Vibration of Pedestrian Overpass, 706
- Panarese, William C.
Fiber: Good For the Concrete Diet?, 1157
- Pandey, Mahesh D.
Mechanics of Shape Optimization in Plate Buckling, 227
see Sherbourne, Archibald N., 280
- Pandey, Ravi S.
Drawdown Solutions with Variable Drainable Porosity, 599
- Pandian, N. S.
Generalized State Parameter for Partly Saturated Soils, 398
- Pant, P. K.
see Murthy, D. S. Ramachandra, 926
- Pantazopoulou, S. J.
Low-Order Interpolation Functions for Curved Beams, 174
see Shahrooz, B. M., 895
- Panzeca, T.
see Giambanco, F., 217
- Papacostas, C. S.
see Oloufa, Amr A., 64
- Papadopolis-Dezorzis, Aristotelis
see Matsoukis, Panayis-Fokion, 244
- Papadopoulos, Basil P.
Settlements of Shallow Foundations on Cohesionless Soils, 385
- Papageorgiou, M.
see Messmer, A., 1071
- Pardo, Juan Lozoya
see Martin-Benito, José Mari Tarjuelo, 635
- Parfitt, Kevin
see Sanvido, Victor, 95
- Parfitt, M. K.
see Syal, M. G., 128
- Paris, Anthony J.
Simple Cord Composites, 270
- Park, Sung Moo
see Oehlers, Deric John, 869
- Park, Yong-Myung
see Choi, Chang-Koon, 181
- Park, Young J.
Equivalent Linearization for Seismic Responses. I: Formulation and Error Analysis, 289
- Parker, Gary
see Sekine, Masato, 499
- Parkinson, Tom
see Vespa, Sesto, 977
- Parsanejad, S.
Behavior of Partially Grout-Filled Damaged Tubular Members, 928
- Parsons, I. D.
see Moradi, B., 187
- Paul, John F.
see Bonner, James S., 312
- Paulson, Boyd C.
see Sanvido, Victor E., 132
- Pawson, Robin
see Fanjiang, Guang-Nan, 1220
- Pearl, Walter L.
Buckling of Suspended Cambered Girders, 784
- Pedersen, Niels Thougård
see Agerskov, Henning, 874
- Pedley, M. J.
see Jewell, R. A., 448
- Peck, Ralf
see El-Bkaily, Marwan, 267
see Jensen, Hector, 944
see Setareh, Mehdi, 799
- Peindl, R. D.
see Janardhanam, R., 690
- Peindl, Richard D.
Evaluation of Flowable Fly-Ash Backfill. I: Static Loading, 389

- Evaluation of Flowable Fly-Ash Backfill. II: Dynamic Loading, 390
- Pekau, O. A.**
Constitutive Model for Concrete in Strain Space, 268
- Pellicane, P. J.**
see Davalos-Sotelo, R., 813
- Pellicane, Patrick J.**
see Sá Ribeiro, Ruy A., 700
- Peltonen, Petri V.**
Road Aggregate Choice Based on Silicate Quality and Bitumen Adhesion, 971
- Pennoni, C. R. "Chuck"**
Visioning: The Future of Civil Engineering, 740
- Peraza, David B.**
see Cuoco, Daniel A., 720
- Perera, Rohan W. S.**
see Houston, William N., 980
- Pérez, Rafael**
see Cabrera, Enrique, 566
- Perić, Dunja**
Evaluation of Plastic Bifurcation for Plane Strain versus Axisymmetry, 184
- Perstorper, Mikael**
see Ohlsson, Sven, 905
- Peters, Jeanne M.**
see Noor, Ahmed K., 175
- Peters, Robert W.**
see Gopalratnam, Venbakm C., 363
- Peterson, Mark R.**
see Abt, Steven R., 554
- Peyras, L.**
Flow and Energy Dissipation Over Stepped Gabion Weirs, 507
- Pezeshk, S.**
Optimal Design of Structures with Kinematic Nonlinear Behavior, 196
- Pfeffer, John T.**
see Uber, James G., 1053
- Phan, D. H. Douglas**
see Howard, H. Craig, 61
- Phang, Kok Wai**
see Pan, Tso-Chien, 715
- Phien, H. N.**
see Azhar, Aftab H., 573
- Phoon, K. K.**
see Quek, S. T., 403
- Pi, Yong Lin**
Energy Equation for Beam Lateral Buckling, 840
Prebuckling Deflections and Lateral Buckling. I: Theory, 922
Prebuckling Deflections and Lateral Buckling. II: Applications, 923
- Pigeon, Michel**
see Banthia, Nemkumar, 674
- Pittman, David W.**
see Rollings, Raymond S., 990
- Platt, John**
Critical Review of Thin-Plate Stability Equations, 182
- Plevris, Nikolaos**
FRP-Reinforced Wood as Structural Material, 694
- Pohland, Frederick G.**
see Luthy, Richard G., 752
- Polensek, Anton**
see Groom, Leslie, 897
- Polivka, Ronald M.**
see Anton, Walter F., 1187
- Ponderlick, R. Martin**
see Thomas, H. Randolph, 118
see Thomas, H. Randolph, 136
- Popov, E. P.**
see Engelhardt, M. D., 929
- Porter, David B.**
see Vargas, Juan C., 1141
- Potter, John C.**
Airfield Pavement Creep Failure Investigation, 719
- Powell, Graham H.**
see Sause, Richard, 74
- Powledge, George R.**
see Wooten, R. Lee, 1122
- Prakash, Anand**
Design-Basis Flood for Rehabilitation of Existing Dams, 486
- Prakash, Shamsher, ed.**
Piles Under Dynamic Loads, 1262
- Prashar, C. R. K.**
see Dong, A., 604
- Prasher, S. O.**
see Gallichand, J., 624
- Pratt, David L.**
see McCormick, Edward H., 1124
- Pratt, Randy C.**
see McKinley, W. Scott, 1146
- Prendergast, John**
The Desalination Situation, 1188
A European Road Comes to the U.S., 1159
A New Era In Transportation, 1148
Perils of Point Loma, 1221
RCC at 10, 1207
Small Systems Struggle, 1119
- Preston, J. L.**
Solid Modeling of RC Beams: 2. Computational Environment, 82
see Austin, M. A., 81
- Preston, Stephen D.**
Impact of Flow Variability on Error in Estimation of Tributary Mass Loads, 331

- Prion, H. G. L.
Beam-Column Behavior of Fabricated Steel Tubular Members, 826
- Prokopowicz, Adam K.
see Berg-Andreassen, Jan A., 1082
- Proubet, J.
see Bardet, J. P., 178
- Pruitt, William O.
see Katul, Gabriel G., 613
- Puckett, Jay A.
see Swift, Daniel P., 52
- Pudar, Ranko S.
Leaks in Pipe Networks, 528
- Puppo, Alberto H.
Evaluation of Probabilities Using Orientated Simulation, 852
- Purcell, Laurence J.
Creating Wetlands, 1186
- Purdy, L.
see Safayeni, F., 667
- Qasim, S. R.
TOC Removal by Coagulation and Softening, 333
- Qasrawi, M. Sh.
see Kayyali, O. A., 673
- Qudaimat, Musa M.
see Saffarini, Hassan S., 930
- Quek, S. T.
Further Contributions to Reliability-Based Pile-Settlement Analysis, 403
- Quigley, R. M.
see Barone, F. S., 420
- Quilez, Dolores
Salinity of Rivers: Transfer Function-Noise Approach, 596
- Quinn, Stephen B.
see Ridings, Richard L., 1150
- Quraishi, Ali A.
Transportation of Demineralized Water: Case Study, 1005
- Rabinow, Scott D.
see Rada, Gonzalo R., 1011
- Rada, Gonzalo R.
Integrated Pavement Management System for Kennedy International Airport, 1011
- Radmilovich, Zoran R.
Ship-Berth Link as Bulk Queueing System in Ports, 1108
- Radwan, A. Essam
see Elahi, S. Manzur, 1023
- Rafferty, Gary
see Bentley, David, 1153
- Raghavendrachar, Madhwesh
Flexibility by Multireference Impact Testing for Bridge Diagnostics, 879
- Rahimzadeh, Housh
Peaches and Concrete, 1128
- Raichlen, Fredric
see Goring, Derek G., 1080
- Raines, Richard D.
Driving Characteristics of Open-Toe Piles in Dense Sand, 372
- Raipure, Diwakar M.
see Mohan, S., 1059
- Rajasekaran, S.
see Pi, Yong Lin, 840
- Rajasekaran, Sundaramoorthy
see Palani, G. S., 871
- Rajeev, S.
Discrete Optimization of Structures Using Genetic Algorithms, 827
- Raju, Kittur G. Ranga
see Kothiyari, Umesh C., 532
- Ramamurthy, Amruthur S.
Momentum Model of Flow Past Weir, 644
- Ramamurthy, K.
see Ganesan, T. P., 855
- Raman, H.
Decision Support System for Crop Planning during Droughts, 588
- Ramana, Anuradha
Removing Selenium(IV) and Arsenic(V) Oxyanions with Tailored Chelating Polymers, 352
- Ramasamudra, Manjunatha
see Vallabhan, C. V. Girija, 677
- Ramirez, Julio
see Alshegeir, Abdulsalam, 72
- Ramos, Jose A.
see Benjamin, Bennie L., 1226
- Rand, Omri
Exact Solution for General Torsion Problems Using Boundary Singularities, 284
- Randall, Clifford W.
see Knocke, William R., 345
- Randall, Robert E.
see Kim, Cheung H., 1087
- see* Zhang, Jun, 1104
- Randolph, Dennis A.
Civil Engineers Shaping Society: Our Social Responsibilities, 725
- Randolph, M. F.
Soil Plug Response in Open-Ended Pipe Piles, 404
- Rangacharya, N. C. V.
see Raman, H., 588
- Rao, A. G. Madhava
see Murthy, D. S. Ramachandra, 926
- Rao, A. Ramachandra
see Bonta, James V., 580

- Rao, Bin
see Zhu, Bofang, 925
- Raouf, Mohammed
 Axial and Free-Bending Analysis of Spiral Strands Made Simple, 296
 Free-Bending Fatigue Life Estimation of Cables at Points of Fixity, 258
 Wire Recovery Length in Suspension Bridge Cable, 942
- Rasdorf, William J.
 NIAM Conceptual Data-Base Design in Construction Management, 62
- Rasheeduzzafar
 Corrosion Cracking in Relation to Bar Diameter, Cover, and Concrete Quality, 696
see Maslehuddin, Mohammed, 680
- Rashid, Rosmadi Abdul
 MSW Incinerator Ash as Aggregate in Concrete and Masonry, 698
- Raudkivi, Arved J.
 Development of Bed Features, 5
- Raymond, Gerald P.
 Reinforced Sand Behavior Overlying Compressible Subgrades, 456
- Razvi, Salim R.
see Saatcioglu, Murat, 847
- Reddy, A. S. S. R.
 Graph-Theory Approach to Eigenvalue Problem of Large Space Structures, 20
- Reddy, J. Mohan
 Design of Control Algorithm for Operation of Irrigation Canals, 632
- Redwood, Richard G.
see Cho, Soon Ho, 884
see Cho, Soon Ho, 885
- Reed, Arthur P.
 In-Place Shear Testing of Tile, 691
- Regli, S.
see Lev, O., 322
see Lev, O., 336
- Rehak, Daniel R.
see Baugh, John W., Jr., 76
- Reimer, Richard B.
see Fenves, Gregory L., 816
- Reinhorn, A. M.
see Juhn, G., 880
see Wang, Y. P., 224
- Reinhorn, Andrei M.
see Nagarajaiah, Satish, 851
- Reis, Luisa F. R.
see Chaudhry, Fazal H., 342
- Ren, Y. J.
see Zhu, W. Q., 183
- Renault, D.
 ALIVE (Advance Linear Velocity): Surface Irrigation Rate Balance Theory, 581
- Rendon-Herrero, Oswald
 Civil Engineering Education in Ecuador, 756
- Rengaraju, V. R.
 Model for Air Travel Demand, 991
- Restrepo, Pedro J.
see Valdés, Juan B., 1063
- Reynolds, J. E.
see Haith, D. A., 317
- Reznicek, K. K.
 Issues in Hydropower Modeling Using GEMSLP Algorithm, 1039
- Rhomberg, Edward J.
see Peart, Walter L., 784
- Riba-Ramirez, Ramon
 Design Charts for Timber Beam-Columns, 789
- Ricci, Paolo F.
see Cox, Anthony L., Jr., 144
- Richard, Ralph M.
 Support Structures for High-Resolution Optical Systems, 17
- Richard, T. L.
see Haith, D. A., 317
- Richards, David R.
see Jones, Norman L., 1115
- Richards, R., Jr.
 Seismic Passive Resistance of Tied-Back Walls, 418
see Neelakantan, G., 410
- Richter, Philip J.
see Drake, Richard M., 35
- Ridings, Richard L.
 Life in the Fast Track, 1150
- Rigo, P.
 Stiffened Sheathings of Orthotropic Cylindrical Shells, 808
- Rigopoulos, Dionysis R.
 Intelligent Objects for Synthesis of Structural Systems, 75
- Riipola, Kirsti
 Determination of Critical *J*-Integral for Wood, 854
see Fonselius, Mikael, 853
- Rinaldi, Peter L.
 A Face-Lift for Lincoln, 1200
- Rinaldo, Andrea
see Fiorotto, Virgilio, 502
- Riva, Paolo
see Cohn, M. Z., 781
- Rives, Stephen R.
see Sanford, Lawrence P., 1117
- Rix, Glenn
see Brown, Dan A., 29
- Rix, Glenn J.
see Baker, Nelson C., 737
- Roberts, Carin L.
 Instrumenting the 'Y', 1217

- Roberts, James E.**
Aesthetic Design Philosophy Utilized for California State Bridges, 1035
- Roberts, Paul V.**
see Harmon, Thomas C., 347
- Robinson, D. N.**
Creep and Creep Rupture of Metallic Composites, 251
- Robinson, Paul F.**
see de Béjar, Luis A., 951
see de Béjar, Luis A., 952
- Robinson, R. Bruce**
see Harms, Willard D., Jr., 338
- Robison, Rita**
Safeguarding Steel, 1151
Seattle Swings Again, 1177
Smart Structures, 1222
- Rodi, W.**
see Lyn, D. A., 517
- Roeder, Charles W.**
see Moorty, Shashi, 819
- Roësset, Jose M.**
see Kausel, Eduardo, 197
- Rohan, Karol**
see Lefebvre, Guy, 445
- Rollings, Raymond S.**
Field Instrumentation and Performance Monitoring of Rigid Pavements, 990
- Romano, Filippo**
Deflections of Beams with Varying Rectangular Cross Section, 282
see Russo, Gaetano, 824
- Ronold, Knut O.**
Model Uncertainty Representation in Geotechnical Reliability Analyses, 384
Probabilistic Stability Analysis for Deep-Water Foundation, 386
- Rosenblatt, Joel H.**
Novel Combined-Cycle Low-Temperature Engine System, 153
- Rosenfeld, Yehiel**
Using Quality Circles to Raise Productivity and Quality of Work Life, 90
- Rosinoff, Bruce**
see Monahan, Rosemary, 1142
- Rosowsky, David**
Limit-State Interactions in Reliability-Based Design for Wood Structures, 802
- Rosowsky, David V.**
Moisture Content and Reliability-Based Design for Wood Members, 955
- Ross, B. B.**
see Kumar, D., 625
- Ross, Dennis H.**
Impact Fees: Practical Guide for Calculation and Implementation, 1032
- Ross, T. J.**
Object-Oriented Programming for Scientific Codes. I: Thoughts and Concepts, 87
Object-Oriented Programming for Scientific Codes. II: Examples in C++, 88
- Rossa, Olivier**
Stresses Induced by Surficial and Deep Loading in Elastic Medium, 432
- Rossman, Lewis A., ed.**
see Arciszewski, Tomasz, ed., 1258
- Rotter, J. Michael**
see Teng, Jin-Guang, 168
- Rouhani, Shahrokh**
see Loaiciga, Hugo A., 477
- Rouphail, Nagui, ed.**
see Paaswell, Robert E., ed., 1269
- Rovers, F.**
see Schmidtke, K., 316
- Rowe, R. K.**
see Barone, F. S., 420
- Rowings, James E., Jr.**
see Federle, Mark O., 657
- Rowlands, Robert E.**
see Rule, William K., 790
- Royet, P.**
see Peyras, L., 507
- Rubin, Edward S.**
Integrated Assessment of Acid-Deposition Effects on Lake Acidification, 313
see Frey, H. Christopher, 142
- Rubin, Robert A.**
In Too Deep, 1233
- Ruggaber, Gordon J.**
see Tsay, Ting-Kuei, 493
- Rule, William K.**
Predicting Behavior of Cyclically Loaded RC Structures, 790
see Wang, Ping, 256
- Runesson, Kenneth**
see Perić, Dunja, 184
- Russell, Jeffrey S.**
Design Engineer/Contractor Bankruptcy: Considerations for Debtor and Creditors, 663
Predicting Construction Contractor Failure prior to Contract Award, 138
Quantitative Study of Contractor Evaluation Programs and Their Impact, 126
Underwriting Process for Construction Contract Bonds, 649
see Adams, Teresa M., 1025
see Jaselskis, Edward J., 139
- Russo, Edwin P.**
Shear-Stress Distribution in Symmetrically Tapered Cantilever Beam, 941
- Russo, Gaetano**
Cracking Response of RC Members Subjected to Uniaxial Tension, 824

- Rwebyogo, Mutabihirwa F. J.
see Charlie, Wayne A., 429
- Rychter, Zenon
 Family of Iterative Shear-Deformation Theories for Shallow Shells, 286
- Sà Ribeiro, Ruy A.
 Modeling Load-Slip Behavior of Nailed Joints, 700
- Saad, Mohammed B.
see Ahmed, Siddig E., 615
- Saadatmanesh, Hamid
see Ayyub, Bilal M., 910
see Ayyub, Bilal M., 911
see Desai, Chandra S., 44
see Tong, Wenxia, 767
- Saatcioglu, Murat
 Hysteretic Behavior of Anchorage Slip in R/C Members, 893
 Strength and Ductility of Confined Concrete, 847
see Alsawat, Jaber M., 892
- Saathoff, Patrick J.
 Wind Loads on Buildings with Sawtooth Roofs, 780
- Sack, R. L.
see Ebrahimpour, A., 821
- Sadeh, Willy Z., ed.
 Engineering, Construction, and Operations in Space III, 1244
see Nowak, Paul S., 37
- Sadek, I. S.
see Sloss, J. M., 24
- Şafak, E.
 Recorded Seismic Response of Pacific Park Plaza. II: System Identification, 846
see Çelebi, M., 845
- Safayeni, F.
 Assessing the Potential of E-Mail for Engineers: Case Study, 667
- Saffarini, Hassan S.
 In-Plane Floor Deformations in RC Structures, 930
- Sahin, M. A.
see Schelling, D. R., 938
- Saigal, Sunil
see Šimunović, Srdan, 266
- Saito, H.
see Sakumoto, Y., 778
- Saka, Anthony A.
 LGG System for Emergency Response Applications, 964
- Saka, Toshitsugu
 Effective Strength of 'Square-and-Diagonal' Double-Layer Grid, 760
- Sakai, Tetsuo
 Wave-Induced Effective Stress in Seabed and Its Momentary Liquefaction, 1091
- Sakamoto, Kenji
see Takena, Koei, 795
- Sakumoto, Y.
 High-Temperature Properties of Fire-Resistant Steel for Buildings, 778
- Salama, Mohamed M.
see El-Hakim, Omnia, 636
- Salas, Jose D.
 Conceptual Basis of Seasonal Streamflow Time Series Models, 538
see Santos, Emidio G., 511
- Salonen, Seppo
see Paavola, Juha, 299
- Samali, B.
see Xu, Y. L., 155
- Sampaco, Casan L.
see Bergado, Dennes T., 419
- Samsuhadi
see Finney, Brad A., 1037
- San, Hasan Ali
 Mechanism of Biological Treatment in Plug-Flow or Batch Systems, 344
- Sánchez, A. Roberto
see Aguirre, Manuel, 823
- Sanchez, Manuel R.
see Kuzmanovic, Bogdan O., 877
- Sanders, Steve R.
see Thomas, H. Randolph, 127
- Sandstrom, Linda K.
see Edil, Tuncer B., 444
- Sanford, Lawrence P.
 Model for Estimating Tidal Flushing of Small Embayments, 1117
- Sano, S.
see Kawasaki, H., 682
- Santamarina, Carlos
see Cesare, Mark A., 1020
- Santos, Emidio G.
 Stepwise Disaggregation Scheme for Synthetic Hydrology, 511
- Sanvido, Victor
 Critical Success Factors for Construction Projects, 95
- Sanvido, Victor E.
 Aspects of Virtual Master Builder, 745
 Site-Level Construction Information System, 132
see Evt, Sunil K., 60
see Hanna, Awad S., 101
see Kamarthi, Sagar V., 70
- Sarabia, José María
see Castillo, Enrique, 1086
- Saran, Swami
 Retaining Wall With Reinforced Cohesionless Backfill, 467
- Sargand, Shad M.
 Structural Evaluation of Box Culverts, 945

- Sarkani, S.
Fatigue of Welded Cruciforms Subjected to Narrow-Band Loadings, 172
- Sarraf, S.
see El-Jabi, N., 1088
- Sarvi, Hamid
Overhead and Profit on Change Orders, 1193
- Sasaki, A.
see Ushijima, S., 537
- Sasaki, Michio
see Takena, Koci, 777
- Sato, Koichi
Elastic Buckling of Incomplete Composite Plates, 154
- Sause, Richard
Object-Oriented Approaches for Integrated Engineering Design Systems, 74
- Savenije, Hubert H. G.
Lagrangian Solution of St. Venant's Equations for Alluvial Estuary, 536
- Savirón, J. M.
see García-Navarro, P., 550
- Sawan, Jihad S.
Strength and Shrinkage of Natural Pozzolan Mortar in Hot Weather, 683
- Sayed, Sayed M.
Efficiency Formula for Pile Groups, 382
- Scarangelo, Thomas Z.
see Cuoco, Daniel A., 720
see Thornton, Charles H., 1131
- Scheffner, N. W.
see Westerink, J. J., 551
- Scheffner, Norman W.
Stochastic Time-Series Representation of Wave Data, 1100
- Schelling, D. R.
Evaluation of Impact Factors for Horizontally Curved Steel Box Bridges, 938
- Schexnayder, Cliff
Dynamic Compaction of Nuclear Waste, 1144
- Schiff, Scott D.
Seismic Performance of Low-Rise Steel Perimeter Frames, 7
- Schmidt, Walter
see Krauthammer, Theodor, 83
- Schmidtke, K.
Evaluation of Collection-Well Parameters for DNAPL, 316
- Schmitz, Gerd H.
Mathematical Zero-Inertia Modeling of Surface Irrigation: Advance in Furrows, 571
- Schneider, Jerry B.
see Xiong, Yihua, 1029
- Schonberg, William P.
Projectile Shape and Material Effects in Hypervelocity Impact Response of Dual-Wall Structures, 43
- Schultz, Arturo E.
Approximating Lateral Stiffness of Stories in Elastic Frames, 770
- Schuermans, Wytze
Identification of Control System for Canal with Night Storage, 597
- Schwartz, Charles W.
see Rada, Gonzalo R., 1011
- Scordelis, Alex C.
see Ohuchi, Hajime, 6
- Scott, P. J. B.
Microbiologically Induced Corrosion, 1161
- Sebaaly, Peter E.
Effect of Tire Parameters on Pavement Damage and Load-Equivalency Factors, 1019
- Seed, H. Bolton
see Castro, Gonzalo, 387
see Evans, Mark D., 409
- Seed, Raymond B., ed.
Stability and Performance of Slopes and Embankments II, 1270
see Castro, Gonzalo, 387
see Evans, Mark D., 409
- Segall, Burton A.
Electroosmotic Contaminant-Removal Processes, 311
see Bruell, Clifford J., 310
- Segarra-García, Rafael
Storm-Water Detention Storage Design under Random Pollutant Loading, 1065
- Ségo, Geneviève
The Hopscotch Algorithm for Three-Dimensional Simulation, 492
- Seible, F.
Analysis and Design Models for Structural Concrete Bridge Deck Overlays, 8
Horizontal Load Transfer in Structural Concrete Bridge Deck Overlays, 9
- Sekine, Masato
Bed-Load Transport on Transverse Slope. I, 499
Mechanics of Saltating Grains. II, 500
- Selinger, Thomas J.
Canada's Green Plan: Unique Approach to Preserving Environment, 751
- Sellmeijer, J. B.
see Koenders, M. A., 415
- Semprini, Lewis
see Harmon, Thomas C., 347
- Sen, D.
Interaction of Steep Waves with Vertical Walls, 1107
- Seneca, Deborah L.
see Mason, John M., Jr., 985
- Sengupta, Arup K.
see Ramana, Anuradha, 352
- Senouci, Ahmed B.
see Eldin, Neil N., 123

- Seo, Il Won
Modeling Low-Flow Mixing through Pools and Riffles, 553
- Serrano, Sergio E.
Migration of Chloroform in Aquifers, 315
- Setareh, Mehdi
Tuned Mass Dampers for Balcony Vibration Control, 797
- Tuned Mass Dampers to Control Floor Vibration from Humans, 798
- Using Component Mode Synthesis and Static Shapes for Tuning TMDs, 799
- see* Jensen, Hector, 944
- Seus, Günther J.
see Schmitz, Gerd H., 571
- Sewards, Joseph
see Allen, Linda, 666
- Shah, Nadir
see Mohammadi, Jamshid, 1010
- Shah, Satish B.
see Omelchenko, Victor, 1171
- Shah, Surendra P.
see Tang, Tianxi, 936
- Shahawy, Mohsen
see Huang, Dongzhou, 953
- see* Wang, Ton-Lo, 881
- Shahrooz, B. M.
Modeling Slab Contribution in Frame Connections, 895
- Shaked, O.
CONSCHE: Expert System for Scheduling of Modular Construction Projects, 119
- Shamsai, Abolfazl
Analysis of Recharge in Anisotropic, Layered, Saturated-Unsaturated Soil, 612
- Shane, Richard M.
see Hauser, Gary E., 1163
- Sharma, K. G.
Analysis and Implementation of Thin-Layer Element for Interfaces and Joints, 302
- Sharma, Satish C.
Reexamination of Directional Distribution of Highway Traffic, 988
- She, M.
see Hahn, G. D., 288
- Sheehan, William E.
see McCormick, Michael E., 1084
- Sheer, Daniel P.
Managing Lower Colorado River, 1056
- Sheikh, Shamin A.
Analytical Moment-Curvature Relations for Tied Concrete Columns, 785
- Sheinman, I.
see Frostig, Y., 214
- Shen, Hayley H.
see Lundberg, Jan, 211
- Shen, Zuyan
Nonlinear Stability Analysis of Steel Members by Finite Element Method, 180
- Shenton, H. W., III.
see Lin, A. N., 208
- Sherbourne, A. N.
see Lu, F., 263
- Sherbourne, Archibald N.
Postbuckling of Polar Orthotropic Circular Plates—Retrospective, 280
- see* Pandey, Mahesh D., 227
- Sherrard, Joseph H.
see Rendon-Herrero, Oswald, 756
- Sherwood, Brent
Technical Issues for Lunar Base Structures, 27
- Sheu, C.
see Juang, C. H., 391
- Shiau, Le-Chung
Transverse Shear Effect on Flutter of Composite Panels, 47
- Shih, Sun F.
see Cheng, Ke S., 584
- Shih, T. Y.
see Faig, W., 1022
- Shimada, Masashi
State-Space Analysis and Control of Slow Transients in Pipes, 544
- Shimizu, T.
see Ushijima, S., 537
- Shimokawa, Hirosuke
see Takena, Koei, 795
- Shinzawa, Kenichiro
see Tokimatsu, Kohji, 450
- Shirima, L. M.
Timoshenko Beam Element Resting on Two-Parameter Elastic Foundation, 171
- Shivashankar, Ramaiah
see Bergado, Dennes T., 421
- Shukla, A.
Dynamic Stresses in Granular Assemblies with Microstructural Defects, 165
- Shuman, Chester A.
Managing for Profit, 1224
- Siddharthan, Raj
Simple Rigid Plastic Model for Seismic Tilting of Rigid Walls, 782
- Siddiqi, Farhat H.
see Fragasz, Richard J., 413
- Siginer, A.
Buckling of Columns of Variable Flexural Rigidity, 192
- Siller, Thomas J.
Design of Tied-Back Walls for Seismic Loading, 464
- Seismic Response of Multianchored Retaining Walls, 463

- Silliman, Stephen E.
see Preston, Stephen D., 331
- Simonovic, S. P.
see Reznicek, K. K., 1039
- Simonovic, Slobodan P.
 Challenges of The Changing Profession, 724
 Reservoir Systems Analysis: Closing Gap Between Theory and Practice, 1052
- Simons, Daryl B.
 Future Trends and Needs in Hydraulics, 564
- Šimunović, Srđan
 Frictionless Contact with BEM Using Quadratic Programming, 266
- Singh, Amarjit
 Experience-Based Issues in Construction Education, 754
- Singh, Awadhesh K.
see Sharma, Satish C., 988
- Singh, Krishan P.
 Adequacy of Surface Water-Supply Systems: Case Study, 1073
 Predicting Sediment Loads, 1213
- Singh, M. P.
see Suarez, L. E., 241
- Singh, Om P.
see Pandey, Ravi S., 599
- Singh, S. Paul
see Marcondes, Jorge A., 970
- Singh, Sukhanander, ed.
 Embankment Dams—James L. Sherard Contributions, 1243
- Singh, Virendra
 Value Engineering at a Superfund Site, 1143
- Sinha, K. C.
see Fwa, T. F., 973
- Sinha, Kumares C.
see Fwa, Tien F., 1
- Sinha, S. N.
see Paliwal, D. N., 230
- Sinha, Sachchidanand
see Naraine, Krishna, 839
- Skaggs, R. W.
see Konyha, K. D., 628
see McCarthy, E. J., 589
- Skelly, David W.
see Jenkins, Scott A., 1134
- Skibniewski, Mirosław J.
 Evaluation of Advanced Construction Technology with AHP Method, 124
- Skrabek, B. W.
see Mirza, S. A., 832
- Slattery, Kerry T.
see Hackett, Robert M., 686
- Slingerland, Rudy L.
see van Niekerk, Andre, 483
- see* Vogel, Koen R., 484
- Sloss, J. M.
 Design/Control Optimization of Cross-Ply Laminates under Buckling and Vibration, 24
- Small, Mitchell J.
see Rubin, Edward S., 313
- Smedema, L. K.
 Reuse Simulation in Irrigated River Basin, 631
- Smith, D. W.
see Stanley, S. J., 53
- Smith, David Lloyd
see Chuang, Poon-Hwei, 762
- Smith, Gary R.
see Thomas, H. Randolph, 118
see Thomas, H. Randolph, 136
- Smith, J. A.
 Nonparametric Framework for Long-Range Streamflow Forecasting, 1041
- Smith, Jane McKee
 Shoaling and Decay of Two Wave Trains on Beach, 1110
- Smith, Michael Lee
 Planning Your Negotiation, 660
- Smith, Perry L.
 Professionalism: Cornerstone of Engineering, 744
- Snell, Bill
see Liska, Roger W., 129
- Snell, Cyril
see Platt, John, 182
- Snyder, K. A.
see Natesaiyer, K., 684
- Snyder, Mark B.
see Marcondes, Jorge A., 970
- Snyder, Richard L.
 Equation for Evaporation Pan to Evapotranspiration Conversions, 642
- Sobey, Rodney J.
 Rapidly Varied Flow Analysis of Undular Bore, 1105
- Sohal, I. S.
 Inelastic Amplification Factor for Design of Steel Beam-Columns, 859
- Sohn, Young G.
see Ayyub, Bilal M., 910
see Ayyub, Bilal M., 911
- Soliman, Afifi H.
see Gadi, Ahmed M., 1015
- Soliman, Mohamed
see Kennedy, John B., 902
- Soltani, Mehrdad
see Riba-Ramirez, Ramon, 789
- Soltis, Lawrence A.
see Fridley, Kenneth J., 787
see Fridley, Kenneth J., 815
see Fridley, Kenneth J., 883

- see* Fridley, Kenneth J., 888
- Song, Charles C. S.**
see He, Jianming, 293
- Songer, Anthony D.**
Knowledge-Based Advisory System for Public-Sector Design-Build, 85
- Soo, Sweanum**
Design Method for Frozen-Soil Retaining Wall, 54
- Soong, T. T.**
see Chang, K. C., 867
see Chen, G., 215
see Wang, Y. P., 224
see Zhang, Ri-Hui, 835
- Soroshian, Parviz**
Moisture Effects on Flexural Performance of Wood Fiber-Cement Composites, 692
- Sotir, Robbin B.**
see Gray, Donald H., 443
- Spana, Paul C.**
see Bell, Larry S., 31
- Spaulding, Malcolm L., ed.**
Estuarine and Coastal Modeling, 1247
- Speck, Robert S., Jr.**
see O'Rourke, Michael J., 887
- Speece, R. E.**
see Tang, N. H., 307
- Speece, Richard E.**
see Nirmalakhandan, N., 319
- Spell, C. Anthony**
see Zhang, Jun, 1104
- Spelt, Jan K.**
see Ackerman, Josef Daniel, 349
- Spencer, B. F., Jr.**
see Suhardjo, J., 303
- Sreenivasan, G.**
see Arockiasamy, M., 49
- Sribalaskandarajah, Kandiah**
see Banerjee, Sunirmal, 411
- Sridharan, K.**
see Misra, Rajeev, 620
- Sriram, Duvuru**
see Ahmed, Shamim, 65
- Sritharan, Subramania Iyer**
Equivalent Kostiaikov Parameters for SCS Infiltration Families, 585
- Srivastava, Ravindra M.**
Type II Sedimentation: Removal Efficiency from Column-Settling Tests, 334
- Staker, Kenneth J.**
see Abt, Steven R., 514
- Stakhiv, Eugene Z., ed.**
see Haimes, Yacov Y., ed., 1266
- Stalnaker, Judith J.**
Analysis of Delamination of Post-Tensioned Silos, 814
- Stam, Cor-Jan M.**
see van der Meer, Jentsje W., 1111
- Stamatopoulos, Aris C.**
see Kotzias, Panagiotis C., 433
- Stamou, A. I.**
see Lyn, D. A., 517
- Standards Committee for Design of Steel Transmission Towers, American Society of Civil Engineers**
Design of Latticed Steel Transmission Structures (ANSI/ASCE 10-90), 1240
- Standley, Robert S.**
see Gilley, Curtiss W., 968
- Stanley, S. J.**
Microorganism Survival in Ice-Covered Marine Environment, 53
- Stapp, John**
see Findler, Nicholas V., 974
- Stark, Timothy D.**
Undrained Shear Strength of Liquefied Sands for Stability Analysis, 460
- Starnes, James H., Jr.**
see Noor, Ahmed K., 40
- Stathopoulos, Theodore**
see Saathoff, Patrick J., 780
- Stauffer, Thomas B.**
see Hatfield, Kirk, 326
- Stefan, Heinz G.**
Efficiency of Jet Mixing of Temperature-Stratified Water, 328
- Sampling of Wastewater Effluent, 318**
see Alavian, Vahid, 557
- Steffler, P. M.**
see Hicks, F. E., 489
- Steiner, Roy A.**
Irrigation Land Management Model, 637
- Sterling, Raymond L.**
Underground Research: Here and There, 1229
- Sternberger, R. Scott**
see Dodds, Peter J., 1170
- Stessel, Richard Ian**
Controlling Pulsed Incompressible Flow, 140
Particle Motion in Rotary Screen, 190
- Stevens, David J.**
Strain-Based Constitutive Model with Mixed Evolution Rules for Concrete, 223
- Stevens, Len K.**
see Goldsworthy, Helen M., 757
see Goldsworthy, Helen M., 758
- Strelkoff, Theodor**
EQSWP: Extended Unsteady-Flow Double-Sweep Equation Solver, 509

- Strzepek, Kenneth M.
see Valdés, Juan B., 1063
- Stumm, Werner
 Water, Endangered Ecosystem: Assessment of Chemical Pollution, 335
- Stumpf, Annette L.
see Songer, Anthony D., 85
- Sture, Stein, ed.
see Ansari, Farhad, ed., 1261
see Budiman, Jeff S., 440
see Perić, Dunja, 184
see Sadeh, Willy Z., ed., 1244
- Su, James
see Fragaszy, Richard J., 413
- Su, John T.
see Ngo, Chien D., 1189
- Suarez, L. E.
 Modal Synthesis Method for General Dynamic Systems, 241
- Suhardjo, J.
 Frequency Domain Optimal Control of Wind-Excited Buildings, 303
- Suidan, M. T.
see Nakhla, G. F., 337
- Sullivan, Richard D.
 Highway Design in 3-D, 1173
- Sumer, B. Mutlu
 Scour Around a Vertical Pile in Waves, 1078
- Summerell, B. Ray
 CAD and the Corps, 1169
- Sun, Bao-Jun
 Design Aids for Reinforced Concrete Columns, 924
- Sun, Limin
see Fujino, Yozo, 275
- Sun, Yuanhui
see Dakoulas, Panos, 469
- Suprenant, Bruce A.
see Reed, Arthur P., 691
- Sussna, Stephen
 Rehabilitation of Infrastructure in Infill Sites, 753
- Sutaria, T. C., ed.
see Paaswell, Robert E., ed., 1269
- Suzuki, Yutaka
see Kim, Gwan, 1030
- Svensson, Holger S.
see Kovacs, Imre, 765
- Svoronos, S. A.
see Hamilton, J., 308
see Jain, R., 309
- Swamee, Prabhata K.
 Design of Trapezoidal Expansive Transitions, 575
 Sluice-Gate Discharge Equations, 574
- Swanson, Craig, ed.
see Spaulding, Malcolm L., ed., 1247
- Swarbrick, Gareth E.
 Modeling Desiccating Behavior of Mine Tailings, 393
- Swift, Daniel P.
 Finite Element Analysis of Cold Embedments in Fresh Concrete, 52
- Swift, M. Robinson
 Diversion Oil Booms in Current, 1114
- Syal, M. G.
 Construction Project Planning Process Model for Small-Medium Builders, 128
- Syed, N. A.
see Sohail, I. S., 859
- Szymczak, C.
see Budkowska, B. B., 226
- Tabatabaee, Nader
see Sebaaly, Peter E., 1019
- Tadros, G. S.
see Dilger, W. H., 106
- Taffé, Patrick
see Carlevaro, Fabrizio, 146
- Taheri, Mohammad R.
see Kukreti, Anant R., 989
- Takabatake, Hideo
 Effects of Dead Loads in Dynamic Plates, 759
- Takahashi, Tamotsu
 Routing Debris Flows with Particle Segregation, 558
- Takena, Koei
 Fatigue Resistance of Large-Diameter Cable for Cable-Stayed Bridges, 795
 Slip Behavior of Cable against Saddle in Suspension Bridges, 777
- Taketsuka, Masataka
see Horiuchi, Sumio, 681
- Takeuchi, Hikaru
see Nanni, Antonio, 747
- Takizawa, Y.
see Ushijima, S., 537
- Talesnick, Mark
see Frydman, Sam, 402
- Tamaro, George J.
see Kerr, William C., 100
- Tamura, Shuji
see Tokimatsu, Kohji, 449
- Tan, L. S.
see Fwa, T. F., 1007
- Tan, Siew-Ann
 Drainage Efficiency of Sand Layer in Layered Clay-Sand Reclamation, 378
- Tan, Soon-Keat
see Chiew, Yee-Meng, 481
- Tang, H. T.
see Veletos, Anestis S., 771

Tang, Jiuru

Seismic Behavior and Shear Strength of Framed Joint Using Steel-Fiber Reinforced Concrete, 775

Tang, N. H.

QSAR Parameters for Toxicity of Organic Chemicals to *Nitrobacter*, 307

Tang, R. C.

see Fridley, Kenneth J., 787

see Fridley, Kenneth J., 815

see Fridley, Kenneth J., 883

see Fridley, Kenneth J., 888

Tang, Tianxi

Fracture Mechanics and Size Effect of Concrete in Tension, 936

Rate Effects in Uniaxial Dynamic Compression of Concrete, 160

Tang, Wilson H.

see Ang, George L., 221

Tang, Yu

see Veletsos, Anestis S., 771

Tanigaki, Masaharu

see Nanni, Antonio, 915

Taniguchi, Yoshiya

see Saka, Toshitsugu, 760

Tanji, Kenneth K.

see Quilez, Dolores, 596

Tankut, Tugrul

see Altin, Sinan, 876

Tarakji, Ghassan

Lessons Not Learned from 1989 Loma Prieta Earthquake, 736

Tarantino, Angelo Marcello

Creep Effects in Composite Beams with Flexible Shear Connectors, 872

Prevention of Stress Relaxation in Viscoelastic Structures, 860

Tarhini, Kassim M.

Wheel Load Distribution in I-Girder Highway Bridges, 830

Tarricone, Paul

Adding Up Admixtures, 1158

Boston's City within a City, 1206

Cranes, Concrete, Construction...and Computers, 1167

Howdy, Partner, 1147

Motown Tunneling, 1154

OCEA, American-Style, 1180

Overlays on Deck, 1195

Portrait of a Manager, 1191

Rail Revival, 1118

Task Committee for the Preparation of Guidelines for Rehabilitation of Civil Works of Hydroelectric Plants, Hydropower Committee, American Society of Civil Engineers

Guidelines for Rehabilitation of Civil Works of Hydroelectric Plants, 1252

Task Committee on Lunar Base Structures

Overview of Existing Lunar Base Structural Concepts, 26

Task Committee on Radiation Energy Treatment, Air and Radiation Management Committee, Environmental Engineering Division

Radiation Energy Treatment of Water, Wastewater and Sludge: A State-of-the-Art Report, 1265

Tatum, C. B.

see Cushman, Nancy S., 97

see Nam, C. H., 113

see Nam, C. H., 117

see Nam, C. H., 120

Tavakoli, Amir

PMSC: Pavement Management System for Small Communities, 984

Socioeconomic Accounting in Construction, 738

Taylor, D. B.

see Kumar, D., 625

Taylor, Henry

see Bernold, Leonhard E., 68

Tenek, Lazarus H.

see Noor, Ahmed K., 252

Teng, Jin-Guang

Buckling of Pressurized Axisymmetrically Imperfect Cylinders Under Axial Loads, 168

Terpening, Thomas B.

Out with the Old, 1197

Teskey, W. F.

Measurement of Deformations in Buried Pipeline, 957

Thackston, Edward L.

Predicting Effluent PCBs From Superfund Site Dredged Material, 346

Thampi, S. K.

Parametric and External Excitation of Marine Risers, 209

Thergaonkar, V. P.

see Choudhari, Nilay, 324

Thevanayagam, S.

Modeling Anisotropy of Clays at Critical State, 201

Thomann, Robert V.

Model of Fate and Accumulation of PCB Homologues in Hudson Estuary, 14

Thomas, Blakemore E.

see Hjalmarson, Hjalmar W., 518

Thomas, H. Randolph

Comparison of Labor Productivity, 127

Effects of Scheduled Overtime on Labor Productivity, 93

Resolving Contract Disputes Based on Differing-Site-Condition Clause, 136

Resolving Contract Disputes Based on Misrepresentations, 118

Thomas, Joonu O.

see Joshi, Ramesh C., 687

- Thoreson, B. P.
see Hart, W. E., 641
- Thorne, Colin R.
see Masterman, Richard, 530
- Thornton, Charles H.
Seismically Safe, Spectator-Friendly, 1131
- Thorpe, Scott Ian
see Ross, Dennis H., 1032
- Thurairajah, A.
see Loganathan, N., 396
- Ting, Bing Yuan
see Lai, Yew Chin, 805
- Ting, John M.
Computational Laboratory for Discrete Element Geomechanics, 67
- Tiong, Robert L. K.
Critical Success Factors in Winning BOT Contracts, 102
Strategies in Risk Management of On-Demand Guarantees, 103
- Tobey, Frank T., III.
see Flick, Loren D., 1196
- Tobita, Jun
see Xue, Song-tao, 248
- Toda, Susumu
see Aida, Tadayoshi, 169
- Tokimatsu, Kohji
Effects of Multiple Modes on Rayleigh Wave Dispersion Characteristics, 449
Use of Short-Period Microtremors for V_s Profiling, 450
- Toman, Michael A.
see Burtraw, Dallas, 147
- Tominaga, Akihiro
Velocity Profiles in Steep Open-Channel Flows, 480
- Tomlinson, Rodger B.
see Webb, Tony, 327
- Tommelein, I. D.
SightPlan Model for Site Layout, 135
Site-Layout Modeling: How Can Artificial Intelligence Help?, 125
- Tong, M.
Correction Criteria of Finite Element Modeling in Structural Dynamics, 194
- Tong, Wenxia
Parametric Study of Continuous Prestressed Composite Girders, 767
- Topping, B. H. V.
see Kirsch, U., 856
- Torseth, David, ed.
Ports '92, 1263
- Toups, Larry
see Sherwood, Brent, 27
- Touran, Ali
Monte Carlo Technique with Correlated Random Variables, 105
- Tourney, Paul
Put to the Test, 1231
- Townsend, F. C.
see McVay, M. C., 455
- Tracy, John C.
Movement of Nonpoint-Source Contaminants Through Heterogeneous Soils, 577
- Trahair, N. S.
see Bild, S., 868
see Pi, Yong Lin, 840
see Pi, Yong Lin, 922
see Pi, Yong Lin, 923
- Triano, James R.
Durability of MSW Fly-Ash Concrete, 699
- Triantafyllou, Thanasis C.
Prestressed FRP Sheets as External Reinforcement of Wood Members, 829
see Plevis, Nikolaos, 694
- Triantafyllou, Michael S.
Nonlinear Impulsive Motions of Low-Tension Cables, 202
- Trieste, Douglas J.
Evaluation of Supercritical/Subcritical Flows in High-Gradient Channel, 533
- Tripathi, R. P.
Irrigation Timing for Wheat Based on Climate, Crop, and Soil Data, 598
- Trout, Thomas J.
Furrow Flow Velocity Effect on Hydraulic Roughness, 643
- Tsay, Ting-Kuei
Thermal Stratification Modeling of Lakes with Sediment Heat Flux, 493
- Tulapurkara, E. G.
see Chacko, Baby, 150
- Tuncer, Erdil R.
see Basma, Adnan A., 447
- Tung, Yeou-Koung
Probability Distribution for Benefit/Cost Ratio and Net Benefit, 1044
- Turan, Mustafa
Velocity Gradient in Filter Backwashing, 353
- Turcotte, Brian R.
Linking Data Bases to Hydraulic Computations, 63
- Turkstra, Carl
see Cesare, Mark A., 1020
- Turnbull, Katherine F.
HOV Lessons, 1204
- Turner, Daniel S.
Steering Clear of Tort Claims, 1179
- Turner, John P.
Constructability for Drilled Shafts, 94
- Tusa, Wayne K.
Reassessing the Risk Assessment, 1139

- Tyagi, Paritosh C.
see Choudhari, Nilay, 324
- Tyagi, R. D.
see Blais, J. F., 348
- Tzivelou, Helen S.
see Golias, John C., 986
- Tzouvakakis, J.
 Commercial Uses of Land Around Urban Railway Stations in Greece, 1033
- Uber, James G.
 Use of Mathematical Programming Methods for Complex Systems, 1053
- Ugaz, Oscar G.
see Raines, Richard D., 372
- Ulrich, Timothy J.
see Sheer, Daniel P., 1056
- Uluatam, Semra Siber
 Civil Engineering Experience and Education, 732
- Umeyama, Motohiko
 Velocity Distribution in Uniform Sediment-Laden Flow, 482
- Vertical Distribution of Suspended Sediment in Uniform Open-Channel Flow, 522
- Usami, Tsutomu
see Ge, Hanbin, 927
- Ushijima, S.
 Prediction Method for Local Scour by Warmed Cooling-Water Jets, 537
- Uyumaz, Ali
 Discharge Capacity for Curb-Opening Inlets, 529
- Side Weir in Triangular Channel, 640
- Uzan, Jacob
 Rigid-Pavement Evaluation Using NDT—Case Study, 1002
- Uzarski, Donald
see McNeil, Sue, 999
- Vagliasindi, Federico
 Wave Front Behavior in Adsorption Reactors, 339
- Valdés, Juan B.
 Aggregation-Disaggregation Approach to Multireservoir Operation, 1063
see Awwad, Haitham M., 539
- Vallabhan, C. V. Girija
 Properties of PVB Interlayer Used in Laminated Glass, 677
- van der Meer, Jentsje W.
 Wave Runup on Smooth and Rock Slopes of Coastal Structures, 1111
- Van Dyer, D. B.
 Strength and Efficiency of Wood Box Columns, 796
- van Niekerk, Andre
 Routing of Heterogeneous Sediments over Movable Bed: Model Development, 483
see Vogel, Koen R., 484
- van Rhee, C.
 Influence of Seepage on Stability of Sandy Slope, 431
- van Rijn, Leo C.
 New Total Sediment-Load Sampler, 569
- van Rossum, Henk
see Winterwerp, Johan C., 559
- Vanegas, Jorge A.
see Krippachne, Robert C., 653
- Vanmarcke, Erik H.
see Cesare, Mark A., 1020
- see* Fenton, Gordon A., 220
- Vargas, Juan C.
 Landfills: Anatomy of Automated Design, 1141
- Vecchio, F. J.
 Finite Element Modeling of Concrete Expansion and Confinement, 890
- Vela, Antonio
see Cabrera, Enrique, 566
- Veletsos, Anestis S.
 Dynamic Response of Flexibly Supported Liquid-Storage Tanks, 771
- Velinsky, S. A.
see Chen, H. F., 1014
- see* Kirschke, K. R., 1013
- Venkataraman, Lakshmi
see Li, Shu-Guang, 531
- Vera, German
see Ramamurthy, Amruthur S., 644
- Vesilind, P. Aarne
see Jacobs, Timothy L., 360
- Vespa, Sesto
 Urban Transit Guides Application of Advanced Train Control, 977
- Vgenopoulou, Irene
 Dynamics of Saturated Rocks. IV: Column and Borehole Problems, 261
- Vigilar, Gregorio
see Diplas, Panayiotis, 503
- Vilnay, O.
see Frostig, Y., 214
- Vincent, Charles L.
see Smith, Jane McKee, 1110
- Vinogradov, Oleg
 Explicit Equations of Motion of Discrete System of Disks in Two Dimensions, 264
- Vipulanandan, C.
see Mebarkia, S., 679
- Vitasovic, Z.
see Zhou, Siping, 357
- Vitek, Jan L.
see Bažant, Zdeněk P., 773
- Vittori, G.
 Flow Field Induced by Sea Waves Over Brick-Pattern Ripples, 541
- Vo, Ngoc-Diep
see Ramamurthy, Amruthur S., 644

- Vogel, Koen R.
Routing of Heterogeneous Sediments over Movable Bed: Model Verification, 484
see van Niekerk, Andre, 483
- Vogel, T.
Two-Dimensional Analysis of Furrow Infiltration, 627
- Vonderohe, Alan P.
see Adams, Teresa M., 1025
- Vorster, Michael C.
Consequential Equipment Costs Associated with Lack of Availability and Downtime, 13
- Vukobratovich, Daniel
see Richard, Ralph M., 17
- Wadhwa, Lal C.
Planning Operations of Bulk Loading Terminals by Simulation, 1099
- Wagner, L. R.
see Ross, T. J., 87
see Ross, T. J., 88
- Wakim, G.
see El-Jabi, N., 1088
- Wall, Friedrich J.
Probabilistic Description of Buffeting Response of Long-Span Bridges, 300
Probabilistic Description of Buffeting Response of Long-Span Bridges: II, 301
- Wallace, John W.
Ductility and Detailing Requirements of Bearing Wall Buildings, 849
- Wallender, W. W.
see Bautista, E., 603
see Renault, D., 581
- Walsh, Matthew T.
see Bruell, Clifford J., 310
- Wang, C. M.
Buckling of Skew Plates and Corner Condition for Simply Supported Edges, 193
Use of Engineering Strain and Trefftz Theory in Buckling of Columns, 283
see Goh, C. J., 298
see Liew, K. M., 841
- Wang, C. Y.
Stability of Column Lowered Into Liquid of Higher Density, 166
- Wang, Dong Q.
Theoretical Study of Stability Criteria for X-Bracing Systems, 233
- Wang, Gang Gary
Complete Biaxial Load-Deformation Behavior of RC Columns, 901
- Wang, Keh-Han
Three-Dimensional Scattering of Solitary Waves by Vertical Cylinder, 1112
- Wang, M. C.
Engineering Behavior of Water Treatment Sludge, 358
- Wang, Pei-Fang
Review of Equations of Conservation in Curvilinear Coordinates, 292
- Wang, Ping
Multivariable Analysis Using Isoparametric Finite Elements, 256
- Wang, Ton-Lo
Cable-Stayed Bridge Vibration Due to Road Surface Roughness, 834
Dynamic Response of Multigirder Bridges, 881
see Huang, Dongzhou, 953
- Wang, Tung-Ming
Fixed-End Moments and Thrusts of Planar Curved Beams, 774
- Wang, Y. P.
Development of Design Spectra for Actively Controlled Wall-Frame Buildings, 224
- Wanless, Brent
GPS/Positioned Digital Video for Airborne GIS Data Acquisition, 963
- Warren, Dennis W.
see Lovett, Thomas G., 1149
- Warszawski, A.
see Shaked, O., 119
- Warszawski, Abraham
see Rosenfeld, Yehiel, 90
- Washburn, Libe
Mixing, Dispersion, and Resuspension in Vicinity of Ocean Wastewater Plume, 478
- Wasył, Joseph
see Jenkins, Scott A., 1134
- Waters, W. Allen, Jr.
see Noor, Ahmed K., 40
- Watson, Chester C.
see Abt, Steven R., 554
- Wayson, Roger L., ed.
Transportation Planning and Air Quality, 1273
- Weatherhead, E. K.
see Afzal, Javaid, 587
- Weaver, Ken
Grouting Against Hazwaste, 1165
- Webb, Tony
Design Procedures for Effluent Discharge to Estuaries During Ebb Tide, 327
- Weber, L. J.
see Nixon, W. A., 3
- Weber, Thomas L.
see Benjamin, Bennie L., 1226
- Webster, Anthony C.
A Case of the Shakes, 1133
- Wei, F. S.
see Zhang, De-Wen, 39
- Wells, Scott A.
Synchrotron Radiation Measurements of Degree of Saturation in Porous Matrix, 257

- Weltz, Mark A.
Hydraulic Roughness Coefficients for Native Rangelands, 626
- Wen, De-Pu
see Yeh, William W.-G., 1074
- Weng, C. C.
Study on Maximum Strength of Cold-Formed Steel Columns, 764
- Werner, Al
see Morrall, John, 992
- West, J. R.
see Guymer, I., 508
- West, Robert C.
Improving International Competitiveness, 733
- Westerink, J. J.
Tide and Storm Surge Predictions Using Finite Element Model, 551
- Wetzel, John P.
see Johnson, Stewart W., 38
- White, D. W.
see King, W. S., 779
- White, M. W.
see Dolan, J. D., 956
- White, T. D.
Limiting Design Parameters for Accelerated Pavement-Testing System, 1018
- White, Thomas D., ed.
Materials: Performance and Prevention of Deficiencies and Failures, 1260
- Whiteside, Stephen L.
see Wooten, R. Lee, 1122
- Whitlock, Carol
see English, Deborah, 1140
- Wicks, J. M.
Calibrating SHE Soil-Erosion Model for Different Land Covers, 621
- Wiegand, Francis
see Hinze, Jimmie, 130
- Wieman, Gary A.
see Gilley, John E., 578
- Wigan, M. R.
Image-Processing Techniques Applied to Road Problems, 972
- Wijeweera, H.
Temperature-Independent Relationships for Frozen Soils, 50
- Willardson, L. S.
see Kandil, H. M., 579
- Willenbrock, J. H.
see Syal, M. G., 128
- Willenbrock, Jack H.
see Hanna, Awad S., 101
- Williams, Mary E.
Measuring Ozone by Indigo Method: Interference of Suspended Material, 367
- Williams, R. C.
see McVay, M. C., 455
- Willis, Joe C.
see Kuhnle, Roger A., 556
- Willis, Robert
see Finney, Brad A., 1037
see Matsukawa, Joy, 1043
- Wilson, E. L.
see Choi, Chang-Koon, 809
- Wilson, F. R.
see Faig, W., 1022
- Wilson, John L.
see Sanvido, Victor E., 745
- Wilson, Kenneth C.
see Nnadi, Fidelia N., 568
- Winandy, J. E.
Effects of CCA Treatment and Drying on Tensile Strength of Lumber, 689
- Winfield, Richard P.
see Thomann, Robert V., 14
- Winn, Stewart D., Jr.
Rehabbing the Rails, 1198
- Winterwerp, Johan C.
Hyperconcentrated Sand-Water Mixture Flows over Erodible Bed, 559
- Wirasinghe, S. C.
see Bandara, S., 979
- Wise, Todd K.
see Bell, Larry S., 31
- Wiser, Edward P.
see Touran, Ali, 105
- Witczak, Matthew W.
see Rada, Gonzalo R., 1011
- Witte, Hans-H.
see Raudkivi, Arved J., 5
- Wolchuk, Roman
Secondary Stresses in Closed Orthotropic Deck Ribs at Floor Beams, 788
- Wolf, John P.
see Meek, Jethro W., 400
see Meek, Jethro W., 401
- Wolfe, Robert E.
Providing Lead Role in Work-Force Diversity, 728
- Wolters, W.
see Smedema, L. K., 631
- Wong, H. L.
see Luco, J. E., 406
- Wong, Ping K.
see Cohen, Julie Mark, 704
- Wong, Siu Tee
see Pan, Tso-Chien, 715
- Wonink, Peter
see Schuurmans, Wytze, 597

- Wood, S. L.
see Hjelmstad, K. D., 769
- Wood, Sharon L.
 Seismic Response of R/C Frames with Irregular Profiles, 786
- Woods, Richard D.
see Chang, Tzyy-Shiou, 430
- Wooten, R. Lee
 Dams Going Safely over the Top, 1122
- Wörman, Anders
 Incipient Motion during Static Armoring, 498
- Wrenn, Jamie B.
see Summerell, B. Ray, 1169
- Wright, James L.
see Katul, Gabriel G., 613
- Wright, Jeff R.
see Benabdallah, Salah, 1026
see Goodno, Barry J., ed., 1239
- Wright, S. J.
see Bühler, J., 495
- Wroblewski, Michael R.
see Klingler, Charles F., 967
- Wu, Theodore Y.
see Wang, Keh-Han, 1112
- Wu, W. Q.
see Zhu, W. Q., 183
- Wurjanto, Andojo
see Kobayashi, Nobuhisa, 1102
- Xia, Chuan
 Influence of ADAS Element Parameters on Building Seismic Response, 864
- Xie, Ming
see Gerstle, Walter H., 179
- Xin, Dapeng
 One-Dimensional Model for Analysis of CRC Pavement Growth, 1004
- Xiong, Yihua
 Shortest Path Within Polygon and Best Path Around or through Barriers, 1029
- Xu, Kangming
 Nonstationary Response of Structures with Closely Spaced Frequencies, 235
- Xu, Xinyi
see Dai, Dingzhong, 1057
- Xu, Y.
see Shukla, A., 165
- Xu, Y. L.
 Control of Along-Wind Response of Structures by Mass and Liquid Dampers, 155
- Xue, Song-tao
 Wave Attenuation in Viscoelastic Continuum with Fading Memory, 248
- Yahagi, Kazuhisa
see Nanni, Antonio, 747
- Yamaguchi, T.
see Sakumoto, Y., 778
- Yamashiki, Yousuke
see Takahashi, Tamotsu, 558
- Yan, Yongcheng
see Tang, Jiuru, 775
- Yang, G.
see Anderson, G. K., 340
- Yang, J. N.
 Aseismic Hybrid Control of Nonlinear and Hysteretic Structures I, 237
 Aseismic Hybrid Control of Nonlinear and Hysteretic Structures II, 238
 Control of Hysteretic System Using Velocity and Acceleration Feedbacks, 290
 Stable Controllers for Instantaneous Optimal Control, 249
- Yang, Kaijian
see Tang, Jiuru, 775
- Yang, Shih-An
 About Moving Contact Lines, 198
- Yang, Xiao-Liang
 Nonlinear Stability of Differential Surge Chambers, 560
- Yang, Yeong-Bin
 Frame Buckling Analysis with Full Consideration of Joint Compatibilities, 205
- Yantarasri, Thongchai
 Thermodynamic Model of Nitrification Kinetics, 341
- Yao, G. C.
 Damage Diagnosis of Steel Frames Using Vibrational Signature Analysis, 271
- Yates, George T.
see Wang, Keh-Han, 1112
- Yates, M. R.
see McCavitt, N., 1003
- Yegian, M. K.
 Dynamic Interface Shear Strength Properties of Geomembranes and Geotextiles, 405
- Yeh, C. C.
see Sheikh, Shamin A., 785
- Yeh, Harry H.
 Shoreline Profile of Stokes-Mode Edge Waves, 1085
- Yeh, William W. -G.
 Systems Analysis in Ground-Water Planning and Management, 1049
- Yeh, William W. -G.
 Optimization of Real-Time Hydrothermal System Operation, 1074
- Yeh, Yi-Cherng
 Building KBES for Diagnosing PC Pile With Inductive Learning, 71
- Yen, Ben Chie
 Dimensionally Homogeneous Manning's Formula, 548

- Yen, Chin-lien
Aggradation-Degradation Process in Alluvial Channels, 567
- Yeo, Khim-Teck
see Tiong, Robert L. K., 102
- Yeung, Albert T.
Diffuse Double-Layer Equations in SI Units, 475
- Yhdego, Michael
Pilot Waste-Stabilization Pond in Tanzania, 323
- Yogendrakumar, Muthucumarasamy
Dynamic Response Analysis of Reinforced-Soil Retaining Wall, 426
- Yong, D. M.
see Chow, Y. K., 425
- Yong, K. Y.
see Chow, Y. K., 425
- Yong, Kwet-Yew
see Tan, Siew-Ann, 378
- Yonge, David R.
see Hossain, M. Akram, 320
- Yoo, Chai H.
see Fridley, Kenneth J., 815
see Leichti, Robert J., 701
- Yoo, Chul-Hee
see Dean, R. G., 1113
- Yoon, C. John
see Abdalla, Jamal A., 77
- Young, Craig S.
see Easterling, W. Samuel, 889
- Yu, A.
see Safayeni, F., 667
- Yu, Dajin
Proposed Similarity Law for Surface Velocity in Hydraulic Models, 547
- Yu, W. W.
see Kassab, M., 934
see Kassab, M., 935
- Yu, Wei-Wen
see Lin, Shin-Hua, 817
- Yuan, Fuh-Gwo
Improved Rectangular Element for Shear Deformable Plates, 173
- Yuan, Zehong
Exact Formulation of Axisymmetric-Interface-Element Stiffness Matrix, 435
- Yue, Yading
Dynamic Elastic-Plastic Buckling Behavior Illustrated by Simple Model, 274
- Zack, James G., Jr.
Schedule "Games" People Play, and Some Suggested "Remedies", 652
- Zahn, John J.
Re-examination of Ylinen and Other Column Equations, 908
Reliability of Bolted Wood Connections, 949
- Zamiskie, Edward M., Jr.
see Oweis, Issa S., 1155
- Zats, Leonid I.
see Ermolin, Yuri A., 610
- Zeghal, Mourad
Analysis of Behavior of Earth Dam Using Strong-Motion Earthquake Records, 381
- Zhang, De-Wen
Model Correction via Compatible Element Method, 39
- Zhang, Jun
Component Wave Interactions and Irregular Wave Kinematics, 1104
- Zhang, Juyong
see Fan, Jiarang, 232
- Zhang, Qilin
see Shen, Zuyan, 180
- Zhang, Ri-Hui
Seismic Design of Viscoelastic Dampers for Structural Applications, 835
- Zhang, Z. X.
see Pekau, O. A., 268
- Zhao, Dongsheng
see Hu, Sau-Lon James, 279
- Zhao, Weijun
see Yu, Dajin, 547
- Zhao, Xiao-Ling
Square and Rectangular Hollow Sections Subject to Combined Actions, 792
- Zheng, Jijia
see Yue, Yading, 274
- Zhou, Donghuo
see Mendoza, Cesar, 540
- Zhou, Siping
Influences of Density on Circular Clarifiers with Baffles, 357
Modeling of Rectangular Settling Tanks, 552
- Zhou, Yiguang
see Haldar, Achintya, 285
- Zhu, Bofang
Shape Optimization of Arch Dams for Static and Dynamic Loads, 925
- Zhu, C. Y.
see Shukla, A., 165
- Zhu, W. Q.
Stochastic FEM Based on Local Averages of Random Vector Fields, 183
- Ziegler, Joe
see Hatfield, Kirk, 326
- Zielinski, Zenon A.
Strength and Behavior of Slender Steel Pipe under Prestressing Force, 919
- Ziemian, Ronald D.
Inelastic Limit States Design. Part I: Planar Frame Studies, 898

AUTHOR INDEX

Zollinger

Inelastic Limit States Design. Part II: Three-Dimensional Frame Study, 899

Zingone, Gaetano

see Romano, Filippo, 282

Zito, M.

see Giambanco, F., 217

Zofnass, Paul J.

Capturing Capital, 1164

Zollinger, Dan G.

see Xin, Dapeng, 1004